

# Product Design Project

## Assignment:

Every day you are exposed to hundreds or thousands of products and services. It is the job of engineers and designers to make quality products that people will buy. Now it is your job to redesign/reengineer one of these products to make it better in at least one if not multiple ways. You must increase the aesthetics, form, and/or function to make the product more desirable.

## Requirements/Restrictions:

- Brainstorming List
- Sketches of top 4 ideas
- Inventor 3D model
- Inventor Drawing File
- 2 Essay Questions



## Grading:

<b>Expectations</b>	<b>Points Possible</b>	<b>Points Earned</b>
<b><u>Brainstorming List:</u></b> List of 10+ products/ideas	10	
<b><u>Sketches of top 4 Ideas:</u></b> 4 quality sketches according to the normal format	20	
<b><u>Inventor 3D Model:</u></b> Quality Inventor 3D model ready to be 3D printed	30	
<b><u>Inventor Drawing File:</u></b> Complete drawing file, top, front, side, Iso, and fully dimensioned	20	
<b><u>Essay Questions:</u></b> Both essay questions answered fully with a 5+ sentence short paragraph	20	
<b><u>Product:</u></b> The overall product chosen fits the need of the project, is quality, good design, aesthetically pleasing and	20	
<b><u>Total:</u></b>	<b>120</b>	

# “Product Design Contest” – Sponsored by rp+m

## Design Category: “Product Design Contest” 2018

Through research and reverse engineering, re-design the aesthetic and functional components of one of the following existing items for 3D Printing/Additive Manufacturing:

- Household product (ex., Swiffer, Curling Iron, Step Stool, Flashlight)
- Kitchen utensil (ex., Pizza Cutter, Tongs, Can Opener, Apple Peeler)
- Garden tool (ex., Rake, Shovel, Tree Pruner, Weed Puller)
- Power or Hand tool (ex., Hammer, Screwdriver, Wrench, Pliers, Cordless Drill)
- *rp+m Engineer Note: Designing for 3D/Additive is different and some of the tools listed above are not ideal for prototyping with 3D/Additive printing. For example, a peeler and the blade of a pizza cutter might be too thin and the pole on a Swiffer or shovel might be long to print. Please keep this in mind when down selecting a product.*



The design does not have to be completely functional but should represent the design intent in a comprehensive manner. Bonus points will be given for a functional prototype (full size or scale model).

**Contest Details:** **The contest officially begins 2-5-18.** There will be three rounds of judging.

**Round One** - Each student entry will be required to submit an orthographic (top, front, right side) drawing with dimensions, a 3D pictorial (isometric) view, and answer two essay questions.

(Describe the benefits of your design; Is the design user friendly & why would someone buy it?)

**DEADLINE (Round One):** Tuesday, February 20, 2018 by 3:00 pm.

**Round Two** – 6 Semi-finalists will be required to submit a CAD drawing along with a 60 second video pitch (YouTube format).

**DEADLINE (Round Two):** Monday,

**March 5, 2018 by 3:00 pm.**

**Round Three** – 3 Finalists will be given a tour of the rp+m facility, then will submit their design through a live presentation to a panel of rp+m judges. Students will be evaluated on a list of 10 different criteria (see contest rubric handout). Each student/team will describe their idea in detail along with a CAD model for their presentation. A 10-minute time limit will be imposed.

**DEADLINE & Presentation at rp+m (Round Three):** Friday, March 16, 2018 (time TBD)

## Winners:

- First Place – Gift Card
- Second Place – Gift Card
- Third Place – Gift Card
- The winning entry will be professionally 3D printed and given to the team/student that designed the idea. The winner will be selected after the judging finals.