## Memorandum

**DATE**: xx Sep 2018

**TO**: Freshman Engineering Clinic I Students

**FROM**: Professor (Instructor Name)

**RE**: Product Archaeology (PA) Project

**Project Goal**: The goal of this Project is to allow Students to explore design and inquire about various engineering design practices while investigating everyday consumer products. Working in Teams, you will utilize your new-found knowledge regarding product development and engineering principles to document a Product Evaluation.

**Product Archaeology**: Product archaeology is the study and dissection of products in order to arrive at a deeper understanding of **the global, societal, economic, and environmental** impacts of the design. Engineers research various products, investigating the technical aspects of the design as well as the sociocultural implications that are attached to them. For the next four weeks, we will be performing a “dig” on a particular product or combination of products (Your Instructor will determine this selection). Much like an archaeological dig is a process, so is product archaeology for engineers. Therefore, each week we’ll complete a phase of the product archeology process: *preparation, excavation, evaluation, and explanation.*

**Schedule**: You will conduct your work in phases. Your team will submit several deliverables as part of the project. The following is a project schedule. Deliverables are due at the beginning of the class period specified by your instructor

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| **Week** | **Description** | **Date Due** |
| 1 | 1. Conduct Background Research and look for places that seem especially interesting and/or likely to yield worthwhile findings 2. Conduct Research on the background and history of your Product 3. Develop your own questions to research based on your previous knowledge / experience coupled with curiosity 4. Develop an Annotated Bibliography to document your citations found | Annotated Bibliography Review in Week 2 |
| 2 | 1. Based on Research conducted last week, develop at least 3 experiments (PathFinder Chapter on Experimental Design) 2. Evaluate differences in designs and determine why they are different 3. Obtain the necessary Test Equipment and ensure a proper Experiment is setup to test your Product 4. Conduct your experiments | Experiments will be analyzed in Week 3 |
| 3 | 1. Review and analyze the results of your Experiments 2. Develop initial conclusions about the Product design as a result of your data 3. Determine whether your conclusions are consistent with Product design and/or Marketing strategies used by Manufacturers 4. Why could they be / are they different? 5. Assess your product design and highlight any recommended changes that would result in a better product 6. Define the value added of your Product in the context of the 4 impact areas (Global, Societal, Economic, and Environmental) | Possible deliverable: Draft Report |
| 4 | 1. Create a Laboratory Report – More information to come! | Final Lab Report and presentation Due in week 5 |
| 5 | 1. Present your findings to the class in a team presentation |  |

**Teamwork**: If you feel there is a problem developing within your team, please see your Instructor before the problem manifests itself. Only one deliverable (Annotated Bibliography / Lab Report / Presentation) needs to be turned in by the team, but it is required that each member initial next to their names verifying that they have contributed equally to the work that is being submitted. Do not initial if you haven’t contributed. ***With that said, your Instructor will come down hard on people suspected of slacking and not contributing to the team. It’s not worth having an individual slide through the class when he/she has not put in their effort.***

**Grading**: The final project consists of the Annotated Bibliography, Lab Report, and presentation. The Annotated Bibliography is worth 25% of the Project grade; while the Engineering Memo is worth 25% of the Project Grade. The Lab Report will be worth 40% of the Project grade; while weekly Lab Participation will be considered for 10% of the Project grade. Failure to participate and/or provide the Deliverables in a timely and quality manner will result in a lower grade on the final project.

**Annotated Bibliography**: This deliverable will include 10 sources that you used to answer the questions you had about your product. For each source, you are expected to include:

* Proper formatting of the citation
* Short summaries of the information in those sources
* 1-sentence analysis of the reliability of the source
* Focus on the context (social, environmental, global, and economic)

**Final Laboratory Report**: The final written report should contain the following sections and should be no longer than **6-8 pages** in written material length. Follow the Lab Report guidelines in Pathfinder.

* **Introduction** with a discussion of the 4 aspects of product archaeology
* **Background/literature review** based on the annotated bibliographies you wrote at the conclusion of the Preparation/Research phase
* **Materials**
* **Methods**
* **Results and Discussion,** including a discussion of 4 aspects of PA and how they relate to the product and the completed testing
* **Conclusion**
* **Works cited** - this will mostly be the citations already collected as part of the Annotated Bibliography
* **Appendix A -** Annotated Bibliography completed earlier
* **Appendix B** - Appropriate Raw Data

**Team Presentation** - The final presentation (or video-- your instructor will decide which) will be presented as a team. For a presentation, you will create PowerPoint slides or other form of visual communication (e.g., Prezi) that, along with the words you say, will include much of the same information as in the report. You will have 10-12 minutes for the presentation and everyone in the team is required to present some of the information.