

Summer Assignment 2023

Honors Introduction to Engineering Online research and reflection essay

Again, please feel free to e-mail Ms. Kimberly Naucodie knaucodie@gmahs.org if you have any questions or concerns about this assignment.

We wish you a safe, happy summer and we look forward to seeing you again in the fall!

The Gwynedd Mercy Academy Mathematics Department

Introduction paragraph - This is a self reflection of what type of engineering you think you're interested prior to starting research in understanding. What type of engineering? Why are you interested in this type? What has influenced you towards this area?

Detailed description and photos for each type of engineering: Complete an informational journal type essay on all the major types of engineering – 1) Mechanical, 2) Electrical, 3) Chemical, 4) Civil, and 5) Architecture (may or may not be architectural engineering). Describe each category of engineering in detail using your own words (please reference reputable notable sources in MLA format at end of essay).

Engineers for each engineering type: Choose a famous “minority” engineer from each type of engineering and explain who they are and what they are noted for and include photos or other interesting criteria you found on them in your essay. You will be presenting this to the class so try to choose engineers from all over the world who are also women of different races who aren't well known. You are their advocate so others in the class will get to know them.

Specialty engineering types: Choose at least an additional two types of specialty engineering that you may be interested in and delve deeper (such as computer engineering, environmental, biomedical, or other). Explain each type of engineering and where the noted schools are for education related to each type. See if you can find good descriptors of what these types of engineers do. Keep in mind that having a chosen specialty like this could limit your career possibilities especially if the field is transforming as we speak.

Reflection paragraph: Upon this research you have conducted, have any of your opinions changed on what you think you'd like to focus on. What type of engineering? Why did it change? Who or what influenced your opinion?

Rubric for grading: (see attached)

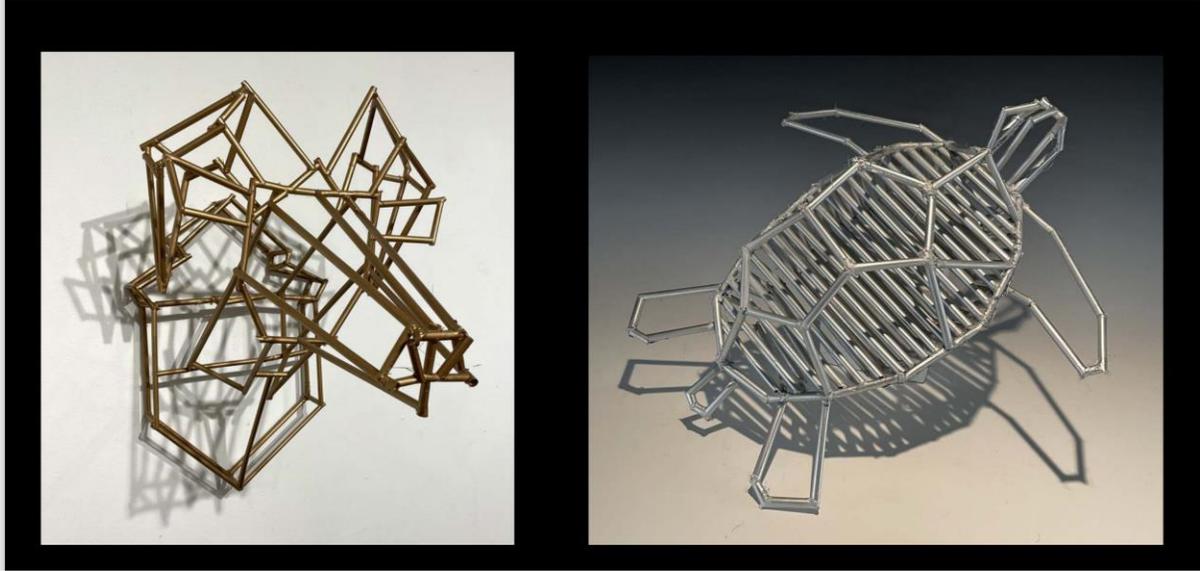
Date for presentation and turning it in: First day of class (you will present what you found and what it means to you to your class)

All essays will be submitted through Turnitin.com on the specified deadline and needs to be in green or yellow upon review. This will be set up first week of returning. All essays should have sources listed in MLA reference format attached to essay.

Build and design structures repurposing elements – Our world is one of using something once and tossing it. I want you to design a structure using common elements such as plastic spoons or “dreaded” plastic straws or dental floss picks (or the like of anything you have in your home that is in excess and no longer needed). Do not buy any elements for this design. Use the aspects of building a strong basis so that it has a good foundation but use your artistic skills in any way shape or form to create a mascot for your own engineering firm. You may use hot glue gun to assemble parts. Grades for these will be based upon committee of input from teachers. These may be used as a display for your arts festival presentation.

Here are just a few examples:





RUBRIC for Journal Essay Research on Engineering

	3	2	1	0
INTRODUCTION Background/History Thesis Statement CONCLUSION	Well-developed introduction engages the reader and creates interest. Contains detailed background information. Thesis clearly states a significant and compelling position. Conclusion effectively wraps up and goes beyond restating the thesis.	Introduction creates interest. Thesis clearly states the position. Conclusion effectively summarizes topics.	Introduction adequately explains the background, but may lack detail. Thesis states the position. Conclusion is recognizable and ties up almost all loose ends.	Background details are a random collection of information, unclear, or not related to the topic. Thesis is vague or unclear. Conclusion does not summarize main points.
MAIN POINTS Body Paragraphs	Well developed main points directly related to the thesis. Supporting examples are concrete and detailed. The narrative is developed with a consistent and effective point-of-view, showing the story in detail.	Three or more main points are related to the thesis, but one may lack details. The narrative shows events from the author's point of view using some details.	Three or more main points are present. The narrative shows the events, but may lack details.	Less than three main points, and/or poor development of ideas. The narrative is undeveloped, and tells rather than shows, the story.
ORGANIZATION Structure Transitions	Logical progression of ideas with a clear structure that enhances the thesis. Transitions are mature and graceful.	Logical progression of ideas. Transitions are present equally throughout essay.	Organization is clear. Transitions are present.	No discernable organization. Transitions are not present.
STYLE Sentence flow, variety Diction	Writing is smooth, skillful, and coherent. Sentences are strong and expressive with varied structure. Diction is consistent and words well chosen.	Writing is clear and sentences have varied structure. Diction is consistent.	Writing is clear, but sentences may lack variety. Diction is appropriate.	Writing is confusing, hard to follow. Contains fragments and/or run-on sentences. Inappropriate diction.
MECHANICS Spelling, punctuation, capitalization	Punctuation, spelling, capitalization are correct. No errors.	Punctuation, spelling, capitalization are generally correct, with few errors. (1-2)	A few errors in punctuation, spelling, capitalization. (3-4)	Distracting errors in punctuation, spelling, capitalization.
Turn It In.com Amount of references to sites	<20%	20 – 30 %	40 – 50 %	> 50%
References used for Essay MLA Format	MLA Format accurate	MLA most aspects given	Only weblink given	No references included

- Please make sure MLA References are complete. Points will be deducted if you do not include all parts of MLA reference criteria.