

HW#NEW

NORTHERN ARIZONA UNIVERSITY
COLLEGE OF ENGINEERING, FORESTRY & NATURAL SCIENCES
DEPARTMENT OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE

EE 476C GUIDELINES: REFLECTIVE ESSAY (due December 17, 2015)

This reflective essay is an evaluation of how well you understand how the design process can be used to meet client needs within realistic constraints. An electronic copy of an 800-1000 word essay is required (your grade will be lowered if either too long or too short). Be sure to use headings, bulleted lists and figures appropriately to help organize your writing and guide the reader.

This 200 point essay is in lieu of a final exam and will be due no later than 2:30PM on Thursday, December 17th. Note: Your essay must be accompanied by a separately graded 200 point team member evaluation for the period since the last evaluation.

Your essay should describe how the design process can be used to design one of the following:

- A solar or wind farm power plant
- An experiment to be launched on a satellite or balloon
- A hand-held device that measures, analyzes and displays characteristics of a water sample
- An application for a smart phone or tablet that takes and analyzes a picture of a person's wound, rash or mole
- A control system for an assembly line
- A custom device to help a disabled person

In the first half of your essay, describe the objectives, typical activities and outcomes that occur in or result from each phase in the design process cycle. You can use the information presented in your book in section 1.1.1 as a reference, but do not copy or quote the material in that section or from other sources. You should have a paragraph for each phase in the design process. Remember that you are describing the process that you would use to design one of the above, not the design itself.

In the second half of the essay, discuss how each of four design constraints chosen from the list of seven below may impact the above design and things you may need to do in order to overcome each of four design constraints you chose. For this half of the essay, you should have four paragraphs referring to the four design constraints you chose.

- Economic
- Environmental
- Social and Political
- Ethical
- Health and Safety
- Manufacturability
- Sustainability

Your essay will be evaluated and graded on your uniqueness and creativity in approaching one of the above projects, and your understanding of the overall design process and design constraints. Although not explicitly graded for English usage, poorly written or unorganized writing will affect your grade.