

Engin 103
February 14, 2008

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Topics:

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Differences between Science and Engineering:

Indicate what is this difference between a related science subject and your engineering field (as assigned in Project 0) using a few words

Copy this document and fill in your team response below. Then save as a web page: name “engsci.html” and upload to your *files* folder.

Team #	Science and Engineering difference
1	Variety of possible outcomes (in which situation, be more specific)
2	Biology is a specific field/subject; Engineering is a process which the field of Biology employs, though engineering as a whole is not limited to this association. (could not extract a conclusion out of this statement)
3	Chemistry is a main science component in chemical engineering. A mastery knowledge of chemicals and their reactions is required to be an effective chemical engineer. Chemistry is the science that deals with the composition and properties of substances and various elementary forms of matter and how the substances act by themselves or with other substances. Chemical engineers apply this knowledge of chemistry in order to develop new substance that can be utilized in a useful way. (the last sentence points to one main difference: engineering applies knowledge discovered in basic science to develop a useful system, device, or material)
4	Civil Engineering has more team work, more creative thinking, operative work than Physics (not necessarily, physicists also work in teams, use lots of creative thinking, particle physicists work with heavy equipments to build large underground circular accelerators of a mile radii)
5	The closest subject to Computer Engineering in our opinion is Computer Science. Computer Engineering involves electrical eng., software eng., hardware eng., and programming while Computer Science deals with theory. (go one step further: Computer Engineering deals with applications of concepts and principles discovered in Computer Science, which directly affect the end user)
6	Physics and Electrical Engineering, Physics is the study of all matter and motion, deals with force, energy, mass and charge. Electrical Engineering is focused mainly on the Physics involving electricity. (this says EE is a branch of Physics, not true. Engineering applies knowledge discovered in Science to build systems and devices people

	can use)
<u>7</u>	Geological science is the study of the composition, structure, physical properties, history, and the processes that shape Earth's components. Geological engineering is the engineering science of applying engineering principles to the study of geological materials as part of the engineering design of facilities including roads, tunnels, and mines especially as related to minerals and mineral products. (This answer has the right words in it. When talking about the difference, I would avoid using “the engineering science”)
<u>8</u>	Industrial/Manufacturing Engineering depending on the particular business is a combination of the principles of physics and the use of logistics. (Good, better if ‘combination’ is replaced by ‘application’)
<u>9</u>	
<u>10</u>	

Is there any connection between this and the difference between science homework and an engineering project?

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CW1

Use boxes and arrows to create a flow chart to show the supply chain of an automobile from the raw materials to the customer. The chain should include at least 6 steps. Then in each step, indicate what type of engineers from the table below would be involved, in a few words explain what they do specifically. Can you include all ten fields in the supply chain?

Engineering fields	Abbreviations
Aeronautical and Aerospace Engineering	AAE
Biomedical Engineering	BME
Chemical Engineering	ChE
Civil Engineering	CiE
Computer Engineering	CE
Electrical Engineering	EE
Geological/Geophysical Engineering	GGP
Industrial and Manufacturing Engineering	IME
Material Science Engineering	MSE
Mechanical Engineering	ME

By alphabetical order, the first two students in each team will submit file cw1_XX_a.html and folder cw1_XX_a_files, the next two students will submit file cw1_XX_b.html and folder cw1_XX_b_files, to the files folder in the server.

LOGBOOK: example of a logbook page

- Use a quadrille notebook; number all pages; date all entries**
- Write your notes for all activities, thoughts, problems and solutions, and learning conclusions related to Engin 103. You should write down progress, outcomes, and conclusions on projects and teamwork; conclusions from class work (including LabVIEW) and homework.**
- In addition you should answer in the logbook all questions listed in these notes in blue, as shown below:**

9) Explain in your own words at least two main differences between science and engineering, for the field you worked with in Project 0.

10) Make a flow chart for the supply chain of a cell phone from raw materials to the end customer. It should include at least 6 steps. Map the ten engineering fields in the table for CW1 into each step, with a few words on what would those engineers be doing.

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