

ASEN 5849-950/4849-905 Independent Study: Solar Car

Prof. Jean N. Koster

Summer 2008

During the summer I will start an initiative for the College and CU to participate in the American Solar Challenge Competition.

<http://www.americansolarchallenge.org/>

and in the world solar challenge

<http://www1.wsc.org.au/>

The effort will be offered as an Independent Study course over summer and communication will be via CULearn. The Summer semester is focused at team formation and some feasibility studies. The founding team will look into designing, building, and testing a solar electric vehicle by developing a Project Definition Document based on the competition requirements. A major effort will also be to investigate financial feasibility of such a project. It is expected that in Fall I will continue this effort as an elective graduate design course for credit, perhaps with an additional senior design project.

Our competition is high caliber as you see from the American solar challenge list of participants, but the list also tells that we ought to participate. Check out the MIT program, it's a huge activity:

<http://www.mit.edu/~solar-cars/flash/index.html>

Such a program would give CU great visibility and might be part of the Energy Initiative EI. It is expected that such a project would be strongly endorsed by the public and Colorado schools and businesses.

Aerospace grade photovoltaic systems are the best and most reliable; aerospace engineering is prepared to deal with extreme lightweight structures, composite materials, aerodynamics, control, etc.

The ME department has the SAE car, so they will be valuable for car mechanics, and many other mechanical skills as well.

EE could participate with electronics/PV electric and battery technology.

Business school should be involved to raise the necessary funds, handle finances.

Law could help with the legal matters involved with insurance, purchases, interpretation of official Challenge issues.

Students from other CU departments could participate based on interest and special.

I will contact NREL for participation and possible funding.

Lockheed Martin could be helpful with their solar panel division.

CTD may be interested in joining with their composites skills.

Other industries will be approached to join in such a highly visible endeavor as well.

Martian roboters have proven the PV technology, which can be transferred to Earth-based systems. Building on that dual-purpose knowledge there is another aerospace spin-off of interest: energy supply on the moon. The current designs of the lunar (Mars) rover exclude solar energy: a solar-assisted lunar rover might be a better approach. This may lead to a future senior design project and therefore of interest to current sophomores and juniors.

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Interested students should e-mail me (jean.koster@colorado.edu) to indicate their interest and/or sign up for the independent study, even if out of town as the course will be to some extent webbased. Signing up for the independent study may not be necessary but may impede communication with those individuals.

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