Unofficial Minutes

(*where people’s names are doesn’t necessarily the tasks underneath are for them. It was just their turn to give progress report during the meeting)*

Ted:

Do more research into what other autonomous (either moving or not (go around campus)) solutions there are currently. Write a blurb for the final (maybe midterm) report. Quantification? So far mostly conceptual.

Jeremy: Bi-materials

Has done some preliminary calculations. Looked into weight reduction (counterweight for ~net zero weight)

Looked at Invar (high end and low end). Cost? Look into. Do more calculations and let Chad know so that he can order some for us (without thinking about properties like corrosion res. Just want actuation)

Look into bi-polymer. Joe Samar has some material. Chad has looked into it.

Look into designing our own (using CES). Look for best situation (difference in thermal coeff expansion)

Look into paper about actuation.

\*to group\* Chad has posted more papers

Don’t get fixated on bi-metallic (look into polumers!)

Kush: SMA

Most info about outdoor blinds

Chad: don’t focus on indoor outdoor, just get to work

Looked into mechanism

Chad: rest state defined at high temp.

Look into what that temp is

Chad: blurb about how bi material strips work and how shape memory materials work

Chad: described a bit how sma works

Chad: there are other shape mem mats other than metal

Chad: Willing to edit written works for us. Be concienscious of time

Juan: Temperature

Chad: look into what controls how hot a room gets. Heat transfer. Room is a closed space. Note that our phones, laptops, etc are getting really hot while outside. Room doesn’t have air movement (so where’s it coming from) and heat doesn’t escape because they’re insultated (adiabatic). Radiative heat transfer. Look into blackbody radiation. If you can’t get rid of heat anywhere else…Model heat increase of interior. Look into getting laser pyrometer. Also can calculate. Need more than just ambient temperature range.

Lauren: CES

Learning software.

Chad: look at PDFs posted

General:

Start report early rather than late. Although aim to finish before report, not likely to happen. Give enough time to write reports. Ask Daan about when midterm is due.

Talked about being evaluated.

Know requirements for the course.

Goals for next week.

***How will we know if it works***? Without actually building it.

Think about things we need to calculate. And the imputs into these calculations.

***How prove quantitatively that it will work.***

Start by satisfying a set of constraints. Then solve other problems.

Maybe will need to provide charts.

Figure of merit.

Want to represent things in a simple way that others could understand.

How are we going to compary bimat and shape memory.