AE460A Fall 2017 General Feedback

Every engineer’s words after a project, “There is never enough lead time. We will do it different next time.”

**Grade Average:**

Average Team Grade B (5.79)

Average Individual Grade B (5.96)

**Comments in report, or lack thereof:** I grade the first of each type of graph or table and provide feedback. Just because I did not provide details on subsequent graphs or tables does not mean they are correct. Typically, the comments apply to all similar graphs, and it is up to the student to correct all of them.

**Grade changes:** If the second semester individual grade increases, I will average the fall semester with the spring semester and update the fall grade upward, but only 2 levels, i.e. C+ can increase up to B.

**Plagiarism:** Does copy and paste of Roskam or Nicolai, without properly annotating the source, considered plagiarism?

**Process and Results (P&R):** A lot of math and input placed in paragraph form, which is hard to read or follow. Body text is used to tell a story, but horrible for math. Here is a fool proof method of communicating the process and results:

* Tell story in body text
* Show single equation and cite the source of equation
* Define terms of the single equations and cite source of term if applicable
* Show graph(s) and point out values used, i.e. Cf vs. Re
* Enter values (with units) – best to show in well-formatted table
* Show results of the calculation

**What to do with Fall Report:**

* Do not throw away the fall report.
* Do not update the old report, leave as-is.
* Review and improve

**Abbreviations used in the grading:**

* EDP: Excessive decimal places
* ECF: Error Carried Forward
* ME: Math Error
* BOD: Benefit of the Doubt
* S/B Should Be

**Team leader changes:** Just let me know and identify it in the new WBS worksheet.

# General Format comments

* Missing section dividers. Do this for each appendix sections too, so I am not hunting for things, i.e. E.1, E.2, etc., each have a numbered divider
* Sections need to start on new page, with a divider. Even more confusing with a divider, and the section carries over. Use insert section break and page break when needed.
* Sections out of order, not IAW RCR
* Folding an 11x17 sheet
* Lining up decimal points – pretend you are an accountant, but instead of money, its weight.
* Do not use scientific notation, except when presenting Re numbers as it is hard for comparison
* Use subscripts vs. underscore, i.e. WTO vs. W\_TO in formal writing.
* Splitting of tables across pages, need to have duplicate header at the top of each page.
* Place Drag Summary on one page, as specified in the RCR.
* Units to live by:
	+ Knots (kt or kn) vs. fps vs. mph
	+ Nautical miles (nm or nmi)
* Body text shall be 1.5. You may use 1.0 everywhere else, i.e. in tables, equations, etc.
* Missing references for equations or figures.
* References not in IEEE format. Reference example not being followed:
	+ <http://marien.sdsu.edu/Class_Materials/ho5-references-example.docx>

# General Content comments

* Print out original and place the Course descript, SOW, SRD and RCR in their own tabbed section – do not reformat or try to page number it. I use these to grade, and it’s a record for future review by ABET. Also, see RCR/SOW/SRD in your appendix for other comments, as I may have used them to grade your report.
* Watch out for oddly exact dimensions, i.e. root chord, 126.226 or tip chord 52.568. Why not try to come up with a whole number or an even fraction, i.e. root chord, 126.250. tip chord 52.500. This goes for LE sweep too. 25.248 degrees is overkill OCD, use 25 deg instead. The other planform values become functions of these easy-to-remember numbers.
* Aircraft comparison – Remember TM-0-1 of aircraft comparison? There was limited discussion in the 10-point item of Design Progression/Aircraft Comparison. Tell the reader aircraft you considered in your design and why. Should have been a cut and paste for some teams.
* CD and CL at ground ATTITUDE, **let’s discuss**
* Pilot look angle, down and side, **let’s discuss**
* Missing units on graphs, and everywhere else.
* Add actual weights used in the graphs for performance, instead of heavy, middle and light.
* Overused word: Efficiency – what does it mean?
* Show usage of reproduced graphs, figures, tables, etc. Don’t just cut and paste to cut and paste. Show me what you did with the graph. i.e. Cf vs. Re
* Lack of supporting documentation (USB, CD, or printed)
* Use the SOW as if it part of the requirements, as it has specifics about format and content for the report, i.e. “Per SOW 8.11.5: Graphs shall be titled and show the configuration, the altitude, the weight, and the quantities graphed; i.e. \_\_\_\_\_\_\_\_\_ vs.\_\_\_\_\_\_\_\_. Altitude and/or weight may be omitted if they appear as parameters on the graph itself.”
	+ Also, heavy/light weight – add the actual weight to the data set you analyzed.
* BL vs WL vs FS for (ACS 0, 0, 0) – how to show on the drawing, **let’s discuss**
* Add CLBreak and MCritical to appropriate graphs (i.e. dh/dt, V/TC, 1/TC).
* Need to expand the CG table. Each LRU, each fuel tank, each component should have its own line item. This is important for MOI’s next semester.
* If you call out a reference, i.e. reproduce a table or graph, and use it to determine a value, make sure to annotate the figure or table to show your decision. Don’t just reproduce it for the heck of it. Show the reader how you used it.
* Velocity units. When reporting air speed in takeoff, landing, cruise, loiter, or any other part of the design mission, always report it in knots. You may have it in ft/s in parenthesis next to it, but always put it in terms of knots. I should never see it in mph. This is for your protection from the pilot community (your customer) that don’t think in fps or mph when flying a plane. And, never use m/s, at least until the US comes to its senses.
* APT: Notice the 10-knot tail wind? How did you account for it in the takeoff and landing analysis?
* Use passive voice with no pronouns…
	+ Incorrect: We calculated the lift of the wing using the following process.
* Correct: The lift of the wing was calculated using the following process.