Airliner Research Homework Assignments

You will be given 10 homework assignments (HW #16 through HW #25) over the next 4 weeks that will use data for the airliner provided to you in three of the attachments to this e-mail. The first three assignments HW #16, #17, and #18 and the last assignment HW #25 will take a while to complete, so plan accordingly. The rest of the assignments won't take very long to complete.

The three attachments are:
1. Homework #16 #17 #18 – Airliner Research (PDF file)
2. A PDF file that has data for your airliner series, titled something like "Boeing 757 data"
3. A PDF file that contains the three-view drawing of your airliner (one of the aircraft in the series) with a title something like "Boeing 757-300 3-view drawing"

Here is a short summary of each homework assignment and its lecture:
HW #16 (Lecture 21b) – a short synopsis paper about the aircraft series
HW #17 – three plots for the aircraft series
HW #18 – measurements and calculations using the three-view drawing
HW #16, HW #17, and HW #18 are all due by 11:59 pm ET on Monday, March 27

HW #19 (Lecture 23) – airliner weight (using ITERTOW.XLS)
HW #20 (Lecture 24a) – aircraft sensitivities (using ITERTOW.XLS)
HW #21 (Lecture 24b) – wing loading (using WINGLOAD.XLS)
HW #19, HW #20, and HW #21 are all due by 11:59 pm ET on Monday, April 3

HW #22 (Lecture 25a) – wing design (using WING.XLS)
HW #23 (Lecture 25b) – fuselage design (using FUSELAGE.XLS)
HW #24 (Lecture 25c) – tail design (using TAIL.XLS)
HW #22, HW #23, and HW #24 are all due by 11:59 pm ET on Monday, April 10

HW #25 (Lecture 27a) -- second design iteration (using REFWT.XLS)
HW #25 is due by 11:59 pm ET on Monday, April 17

HW #16 and HW #17 are for all aircraft in the aircraft series
HW #18 through HW #25 are for only the highlighted aircraft in yellow on the data sheet
You will be using the three-view drawing for HW #18, HW #23, and HW #24
You can download the various Microsoft Excel files from Canvas
You will be submitting your completed assignments via Canvas

Project #1 Assignment

There are also two files that are attachments to this e-mail that provide you with your team's Project #1 assignment and some tips on how to accomplish this project. You should go over Lecture 21a - Mission Analysis and read and understand the tips file before starting work on this project. The BD-5J Flight Manual is posted on Canvas. This project (worth 15% of your semester grade) will take some time to complete, so plan accordingly.

The attachments are:
1. A Microsoft Excel file with three worksheets in it:
    - Project Assignment – this contains the BD-5J flight profile
    - Mission Worksheet – detailed information about each mission segment
    - Mission Summary – time, fuel, and distance for each segment of the mission
2. Instructor Tips – Using the Flight Manual (PDF file)

You will submit your completed Mission Worksheet and completed Mission Summary in the Microsoft Excel file via Canvas, **due on Monday, April 3**.

Send me your questions via e-mail anytime or ask your questions during our Zoom Homework Help Sessions on Mondays.

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