MAE 312 Aircraft Flight Dynamics

Assignment

This is a group assignment. You are required to team up with your classmates and complete a team project. Each team will need to give a mid-term presentation, a final presentation and submit both soft-copy and hard-copy of report. Lastly, each student should submit an individual report.

Important Timelines:

1. **Nov-21 2022 10:00am.** You are required to form a team (2 team members) before this timeline. The captain of the team should send a name list of your team to email (zhangx8@sustech.edu.cn and xiex2022@mail.sustech.edu.cn), remember to cc your teammates. Students who did not form a team before this timeline will be team up randomly.
2. **Dec-8 2022.** In the class on Dec-8 2022, each team should give a brief presentation on the progress of the project so far. The presentation should not exceed 5 mins. You are encouraged to present in English.
3. **Dec-26 2022.** In the class on Dec-26 2022, each team should give a final presentation on the project. The presentation should not exceed 10 mins. You are also encouraged to present in English. The hard copy of report should be submitted at the class, the soft copy of report should be sent to email (zhangx8@sustc.edu.cn and xiex2022@mail.sustech.edu.cn) before **Dec-26 2022 22:00pm.**

Requirements

1. Choose a jet-driven, 4 to 20 seated passenger aircraft.
2. Report its flight performance characteristics include but not limited to take-off distance, landing distance, climb rate, climb angle, climb speed, climb time, service ceiling, turning radius, turning rate, range, endurance, power available, power required, stall speed, drag polar, minimum and maximum speed and so on.
3. Perform analytical or numerical calculation to support the flight performance characteristics. Comment on your results.
4. You may use OpenVSP, Excel, MATLAB or other available computer code in your assignment. Do attach the code in appendix.
5. State your assumptions and reference clearly.
6. Individual report: Fill in the form attached.

Report Details

1. No more than 20 pages.
2. With cover page, table of content, main body, references, and appendix.
3. A sample of the format is attached.
4. Submit a hardcopy and softcopy (softcopy through email). Each group only need to submit one hardcopy of the report. Each student should submit one softcopy of final report and one individual report.

力学与航空航天工程系

DEPARTMENT OF MECHANICS AND AEROSPACE ENGINEERING

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Student Name1:_____

Name2:_____

Student ID 1:_____

ID 2:_____

Date:_____

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Individual Report

You will need to evaluate the contribution of the team members on the project on 4 aspects: Research, Analysis, Documentation and Presentation. There are 10 marks for each aspect in each group, the sum of all the team members in one group should be 10 marks on each aspect. Each student should submit an individual report, please attach it in the last page of your soft copy report.
Note: Your report will not be disclosed to any other students in the class.

Name	A	Student ID	XXXX	Group ID	X
Group Member	Research	Analysis	Documentation	Presentation	Total
1:					
2:					
Total	10	10	10	10	40

（For example, please delete this line when you submit your own report.）