AE3211-1 Systems Engineering and Aerospace Design

Tutorial 2020 - General Instructions

Introduction

This document provides you with all the general information needed to prepare and execute the AE3211-I Tutorial. There will be two separate tutorial assignments, one on Aircraft and one on Spacecraft field.

To pass the course you must participate and pass both the aircraft and the spacecraft tutorial assignments and the exam.

More information on the tutorial process, requirements and grading are given on Brightspace in the document "Assessment Policy for the AE3211-I Course" (available in the "Course Information" folder). Detailed information on the two different tutorial assignments (Aircraft and Spacecraft) are provided in separate documents.

The tutorial will proceed through two successive phases: Tutorial Preparation (individual work, at home) and Group Tutorial Execution (group work, in the studio classroom). Before starting the tutorial preparation work, you shall therefore read, carefully, the entire assignment documents in the following order:

1. This document (General Instructions);
2. The Tutorial Preparation Assignments related to the fields Aircraft AND Spacecraft;
3. The Group Tutorial Execution Assignments related to the fields Aircraft AND Spacecraft.

Tutorial Preparation

The tutorial preparation, for both Aircraft and Space assignments, will be an individual work, with a total expected effort of 20 hours. Out of 20 hours, 10 hours are allotted to Aircraft assignment and the other 10 to Space. During this phase you will be asked to find some specific documentation related to the assigned mission/tasks and to perform some preliminary work required as input for the tutorial execution. The final deliverable list shall consist of two Preparation Reports, one for aircraft and the other for space. For more details on the assignments and the required report format, see the Tutorial Preparation Assignment documents for Aircraft AND Spacecraft.

Group Tutorial Execution

The group tutorial execution will take place in two tutorial sessions, one on the 30th and the other on the 31st of March 2020. Each student will be assigned to one of the two sessions. During the session both the aircraft and the spacecraft tutorial execution will be performed. The information regarding your tutorial execution session will be available on Brightspace along with your tutorial preparation pass/fail results. These results and session allocation will be published on Brightspace on the 25th of March: the allocation to one of the session is randomly generated by the coordination staff and it cannot be changed. In each session, both the Aircraft and

Spacecraft tutorials will be executed in group of 6 students, in a studio classroom environment. It is highly advised that each student will bring his own laptop.
The total session duration is 5 hours, where 2,5 hours shall be spent on the aircraft tutorial, and 2 hours on the spacecraft one: the tutorial will be NOT executed in parallel. The tutorial execution order (i.e. first Aircraft, then Space or vice versa) will be communicated at the beginning of the tutorial session. In the first 15 minutes on the day of the tutorial, the students themselves will form the student groups and distribute the work, and their composition will remain the same for both the Aircraft and Space tutorials. Each group will represent a System Design Team working on the given mission assignments. During this phase, you will be asked to setup the team, to put together the different ideas of team members coming from the individual preparation work in order to derive a consolidated set of requirements and to complete the tasks mentioned in the Group Tutorial Execution document. Soon after the beginning of each tutorial execution, there will be a feedback session from the customer, informing you about some requirement or design change (via Brightspace). The groups react to the given changes and eventually iterate the design concept. The final deliverable list shall consist of two Tutorial Reports (i.e. two reports per group), each one delivered at the end of the allocated hours. Specific delivery instructions will be given on the tutorial day. For more details on the assignment and the required report format, see the Tutorial Execution Assignment documents for Aircraft AND Spacecraft.

Expected hours

It is expected that the student will spent on average the following amount of hours:

- Tutorial Preparation: 20 hours [10 hours for Aircraft and 10 hours for Spacecraft]
- Group Tutorial Execution: 4,5 hours [15 min groups definition, 2,5 hours for Aircraft, 15 min break and 2 hours for Spacecraft]

Mandatory Deliverables

The following deliverables must be submitted in order to receive a grade for the tutorial session

1. Two Preparation Reports (individually submitted by each student). Note: Without the two preparation reports (Aircraft and space), or also if only one does not comply to the pass criteria indicated in the Tutorial Preparation Assignment documents, you will not be eligible to participate to the group tutorial execution! Both reports need to have a Pass in order to participate in the Group Tutorial execution.
2. Two Group Tutorial Reports (Aircraft and Space).