AE 470 – Lab Project Assignment

Spring 2024

Overview

This document outlines the expectations for the Orbital Mechanics course Lab Project assignment. The primary goal of the Lab Project assignment is to apply and extend the orbital mechanics concepts learned in class to practical engineering software used in industry and research. The Lab Project will focus on digital orbital analysis and space mission engineering in AGI's Systems Tool Kit (STK).

Requirements

Students must create an account with AGI using their @clarkson.edu email address. Students may choose to use STK through Clarkson's AppsAnywhere program. This project is divided into two major phases, aligning with the STK Certification levels:

1) Level 1 STK Certification

Description: Level 1 (L1) STK Certification covers the fundamental skills required to demonstrate proficiency in STK, including: building basic scenarios, generating reports, and recording videos for space missions.

Preparation: Level 1 Beginner Tutorials – Online, On-Demand [self-paced training manuals and videos]

Estimated Duration to Complete Certification: 4 hours

Test Registration: Students must register for the Level 1 STK Certification test. After registration, students will have up to 14 days to complete the test.

Grading

Students will receive credit for attempting the certification test and for successfully passing the test. To continue to Level 2, students must successfully pass the Level 1 test. Students may retake the test multiple times, as time in the course permits, until a passing grade is achieved. Please note, AGI requires approximately 5 business days to review and grade a certification test. To obtain credit for an attempt, students must submit screenshots of their email from AGI indicating their Level 1 STK Certification Test attempt for partial credit and the email with their personalized Level 1 STK Certification for full credit.

2) Level 2: STK Master Certification

Description: Level 2 (L2) STK Master Certification builds off of the STK fundamentals established in L1 and covers more advanced analysis capabilities and tools to measure and quantify mission effectiveness.

Prerequisite: Level 1 STK Certification

Preparation: Level 2 Advanced Tutorials – Online, On-Demand [self-paced training manuals and videos]

Estimated Duration to Complete Certification: 8 hours

Test Registration: Students must register for the Level 2 STK Certification test. After registration, students will have up to 14 days to complete the test.

Grading
Students will receive credit for attempting the certification test and for successfully passing the test. Students may retake the test multiple times, as time in the course permits, until a passing grade is achieved. Please note, AGI requires approximately 5 business days to review and grade a certification test. To obtain credit for an attempt, students must submit screenshots of their email from AGI indicating their Level 2 STK Certification Test attempt for partial credit and the email with their personalized Level 2 STK Certification for full credit.

Recommended Timeline and Hard Deadline

Students may complete this Lab Project at their own pace, a recommended timeline is provided below: **Deliverable**	**Recommended Timeline for Completion**
L1 STK Certification Attempt	March 1, 2024
Passed L1 STK Certification	Mar. 8 2024 (*approximate grade return from AGI*)
L2 STK Master Certification Attempt	March 29, 2024
Passed L2 STK Master Certification	Apr. 5, 2024 (*approximate grade return from AGI*)