

# Exam 1

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**Due** May 18 by 11:59pm    **Points** 100    **Submitting** a text entry box    **Available** after May 12 at 12am

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This exam is an individual assignment. Although you may not use help from others, this exam is open book, open notes, open past assignments, and open but limited internet. You may use the internet, but websites that allow you or other classmates to post questions and get solutions are not allowed. For example, Chegg, Course Hero, Quizlet, Slader, and other homework-help websites are not allowed.

Your assignment is to make an autopilot for NED The MATLAB Flight Simulator. It will likely require you to code a quaternion orientation estimator, a waypoint following algorithm, and feedback control algorithms. You will need only the following files:

1. [runme\\_NED\\_do\\_not\\_modify.m](https://byui.instructure.com/courses/232306/files/105581980?wrap=1) (<https://byui.instructure.com/courses/232306/files/105581980?wrap=1>)   
([https://byui.instructure.com/courses/232306/files/105581980/download?download\\_frd=1](https://byui.instructure.com/courses/232306/files/105581980/download?download_frd=1))
2. [NED\\_The\\_Exam1\\_Function.m](https://byui.instructure.com/courses/232306/files/105410980?wrap=1) (<https://byui.instructure.com/courses/232306/files/105410980?wrap=1>)   
([https://byui.instructure.com/courses/232306/files/105410980/download?download\\_frd=1](https://byui.instructure.com/courses/232306/files/105410980/download?download_frd=1))

The runme file should not be modified. Only the Exam1 function should be modified. MATLAB persistent variables are allowed if you desire to use them.

## What to submit

Copy and paste the code from your *NED\_The\_Exam1\_Function.m* file into the text entry block. The instructor will run your code with a local copy of the *runme\_NED\_do\_not\_modify.m* file to check how well your autopilot is able to fly the airplane in the flight simulator. Partial credit for failed autopilots will be awarded, so please submit what you have even if your autopilot does not work perfectly.

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