# Assignment 5

## Due Monday 9 October 2023, at the start of class

Please read Lectures 6,7,8,9,10 in the textbook *Numerical Linear Algebra* by Trefethen and Bau. This Assignment covers projectors, QR, and Gram-Schmidt.

DO THE FOLLOWING EXERCISES from Lecture 6:
- **Exercise 6.3**      *Hint. You are free to use the SVD!*
- **Exercise 6.4**

DO THE FOLLOWING EXERCISES from Lecture 7:
- **Exercise 7.1**

DO THE FOLLOWING EXERCISES from Lecture 8:
- **Exercise 8.2**      *Note. This simply asks you to implement Algorithm 8.1. Use your preferred language.*

DO THE FOLLOWING ADDITIONAL EXERCISES.

**P10.**     Suppose $A \in \mathbb{C}^{m \times n}$, for $m \geq n$, is a matrix with ortho*gonal*, but not ortho*normal*, columns. Describe its reduced QR decomposition.