Exam IV Study guide

Exam 4 for CE 311K is a one-hour open internet exam. However, I strongly recommend you to prepare for the exam and not bank on the fact you can search online. I recommend preparing a summary sheet of 8.5 x 11 inch of your own handwritten notes - this is a good learning exercise. The exam questions will be determined such that they satisfy a subset of the objectives listed here.

Finals will cover:

- vectors, matrices, solution of linear system of equations.
- Relevant assignments and labs

To perform successfully on Exam 4, you should be able to:

1. Determine if a given Matrix-Vector operation is valid or not (for e.g., $A \cdot b$, where A is a 3x3 matrix and b is a 3x1 vector) and estimate the shape of the output.
2. Use array slicing in vectors and matrices to get selected sub-set of elements, rows or columns.
3. Perform Gauss Elimination by hand for a given set of 3 linear equations.
4. Perform a maximum of three iterations of Gauss-Seidel for a given system of 3 linear equations by hand.
5. Evaluate if a given matrix A can be solved using Gauss-Seidel iterative approach.
6. Implement the system of linear equations of a truss in a matrix format. Linear equations will be provided.

You won't be required to write lengthy code (more than 30 lines). I will not penalise for obvious typos and syntax errors in your code (for e.g., missing `:` at the end of function definitions), unless that is what is tested.