CE311K Spring 2009 Second Exam April 16, 2009

The exam is open book and open notes. You may use your course text book and your notes and handouts for this class.

Topics

1. **Subprocedures**
    a. **Subs**
        i. **How are they defined**
        ii. **How do they work**
        iii. **What are arguments**
        iv. **Pass by "Value", pass by "Reference"**
    b. **Functions**
        i. **How are they defined**
        ii. **How do they work**
        iii. **Structured Programming**
2. **Loops**
    a. **Do While**
        i. **Indeterminate vs Determinate looping structure**
        ii. **How are they defined**
        iii. **How do they work**
        iv. **What is an "Infinite" loop**
        v.
    b. **Do Until**
        i. **How are they defined**
        ii. **How do they work**
        iii. **How it Do Until different from Do While?**
    c. **Peek**
    d. **For Next**
        i. **How are they defined**
        ii. **How do they work**
        iii. **How many times are they executed?**
        iv. **Nested loops**
3. **Arrays and Matrices**
    a. **Arrays**
        i. **Definition**
        ii. **Index**
        iii. **Use**
        iv. **Multidimensional arrays**
        v. **String arrays and Splitting**
    b. **Matrices**
        i. **Definition**
        ii. **Arithmetic**
4. **Linear Equations**
    a. **Direct Methods**
        i. **Gauss Elimination**
            1. **Forward elimination**

2. **Backward substitution**
3. **Pivoting**
4. **Roundoff error**

b. Indirect Methods

i. **Iteration**
ii. **Errors and Stopping Criteria**
iii. **Jacobi**
iv. **Gauss Seidel**