Content of Engineering 325/326 Lab Reports

Lab reports should be viewed as formal technical reports, written in the third person. At a minimum the report should include the following sections.

1. **Introduction**
   Provide a brief description of the problem setting and a statement of the objectives for the exercise.

2. **Methodology**
   Describe the approach used to meet the stated objectives. The governing equation(s) should be included and each term in the equation(s) should be described as illustrated below.

$$y = mx + b \tag{1}$$

   where:

y = BOD concentration (mg/l)
x = COD concentration (mg/l)
m = regression constant (slope of the line)
b = regression constant (y-intercept) (mg/l)

   The algorithms used should be described in sufficient detail that an otherwise informed reader could implement your problem solving approach. Please cite references using the author/year style. Some examples of this citation style are given below.

> It can be shown that the BOD concentration will always be less than the COD concentration (Adams and West, 1992; Smith, 1995). Jones et al. (1991) found that a simple linear equation was often an adequate model for the relationship between COD and BOD.

3. **Application**
   Describe the application of the stated methodology to the problem. Provide tables of important model parameters, initial conditions, boundary conditions, etc. used in the application.

4. **Results and Discussion**
   Provide a description of the outcome of applying the stated methodology to this particular problem. Use tables (with titles at the top in sentence format), and figures (with titles at the bottom in sentence format) to highlight the important findings. Each table and figure should be described in the text. Provide a detailed discussion of the results, including an examination of the sensitivity of the solution (or design decision) to different solution algorithms, algorithm parameters, and input and model errors or uncertainties.

5. **Conclusions**
   What can be concluded from the results. After an introductory sentence, this section may be in an itemized (list) style. Be sure you only draw conclusions from what was observed in this work.

6. **References**
   List any references you cited here in the following format.

   1. Adams, Robert L., and Tom E. West. 1992. *Clarifier Design in Tropical Regions*. Water Research, 44(3), pp201-208.
   2. Jones, Ed, David S. Bowles, and Bruce Beck. 1991. *A Simplified Approach to Modeling BOD Removal in Trickling Filters*. In, Mathematical Models of Wastewater Treatment Processes, P. Lessard, ed., Wiley, New York, 402p.

7. **Appendix**
   Copies of the program listing, sample input, and sample output.