**CE 374K Hydrology Final Exam (Draft) Spring 2012**

There are three questions on this exam. They are of equal credit.

1. **Fundamental Concepts of Hydrology**

Choose **five core concepts, where a concept can be a principle, a model or an equation** that you consider to be fundamental to hydrologic knowledge and practice. Describe these concepts, explain how they are used, and why you chose them as your core concepts. **Draw a diagram** that relates the other main topics and ideas in the course to the ones you have selected as your five core concepts. In answering this question, please keep in mind these factors:

* There is no unique answer to this question. What I am looking for is your logic and sense of understanding the course as a whole, rather than in its parts.
* Cover the whole course. Don’t choose your five core concepts from one section of the course
* Don’t choose one of your core concepts as a special case of another. The core concepts should be substantially independent of one another

(I will provide space for you to write out your answer to this question on the answer sheets provided during the exam).

**2. Hydrologic Design and Computation**

Select a hydrologic design problem of your own devising that involves the determination of a design discharge at a particular point on a stream. Select a geographic location where your design will be applied. Describe how geographic data can be used to determine the properties of the watershed draining to this point. Determine the design discharge using one of the HEC computer models used in this course. Describe what you will do with the design discharge once it is determined. Present your problem solution in typed form using not more than two pages. You may bring this solution to the exam and staple to the answers you provide for the other questions.

The grading for this problem will be:

Technical correctness of the solution 20 points

Clear and well-described presentation 8 points

Originality of the problem 5 points

**3. Hydrologic Analysis and Definitions**

This will comprise problems, definitions and explanations like what have been on the first two quizzes for the final section of the course since Exam 2.