CVEN 664 – Water Resources Planning and Management
Study Questions #5: Lectures 16-17

Institutions: Conclusion

1. What are the general effects of institutions (i.e., law and the organizations concerned with law) on water resources systems?

2. Sketch a multi-objective tradeoff surface for a generic water resources system. Then, indicate how institutions change the multi-objective space in which the system can operate.

Variability and Change in W.R. Systems

1. Name four separate definitions for drought. For each: (a) Specify the relevant focus of the definition; (b) Name the quantitative metric used in each definition; (c) Explain the concept of a "counter" in the definition; and (d) Discuss the relative sensitivity of this definition to important parameters.

2. What are the 2 defining characteristics for drought? Which of these is not usually included in characterizing flood? How is drought a relative phenomenon? What is the intellectual validity of the statement "perpetual drought"?

3. How is the Palmer Drought Severity Index (PDSI) computed? What are the strengths and weaknesses of this index? Specify the range of values computed by PDSI and their meanings.

4. How do societies cope with drought? What are important characteristics of drought planning? How does drought planning differ from planning for floods?

5. Name several important climate phenomena which have importance as climate teleconnections. For each, (a) Describe the physical phenomenon at work; (b) Give the oscillatory period of the phenomenon; and (c) Name significant climatic anomalies correlated to the phenomenon.

6. Describe how climatic variability transforms deterministic tradeoff surfaces into probabilistic ones. For 2 water resources objectives, sketch a "spaghetti plot" of multiple distinct tradeoff curves, and then sketch a probabilistic representation of this same variability.

7. Discuss how climatic cycles of multiple oscillatory periods are at work in the climatic variability of the southern U.S.

8. Describe how GCM's are used to predict potential future climate change. What are the important characteristics of these GCM's that enhance or limit their usefulness. Is there agreement among the various GCM's as to general future climate trends?