DEL 974 **California Water Crises: A Case Study Approach**. Course Instructor: David E. Hinton, PhD

The Sacramento River Watershed extends from the slopes of Mt. Shasta in the North to the Sacramento-San Joaquin Delta in the South and after joining the San Francisco Bay, forms the largest estuary in the western United States. Flanked by peaks of the Coastal Range in the West and the Sierra Nevada Mountains in the East, this watershed drains 22,146 sq. miles of land, averaging 22 million acre-feet of runoff per year. The Delta, the hub of the state’s water supply, provides at least a portion of all drinking water consumed by 23 million Californians and irrigation water for over 7 million acres of the most highly productive agricultural land in the world.

By several key criteria, the Delta is now widely perceived to be in crisis. Land subsidence, sea-level rise, and changes in climate make Delta levees increasingly vulnerable to failure from earthquakes, floods and other causes. Endangered species and fisheries continue to decline and disruptive nonnative species continue to invade. Salts entering from the ocean and the San Joaquin Valley’s agricultural drainage, as well as pesticides, metals, and other contaminants from agricultural and urban lands threaten Delta water quality.

This course is a synthesis of science and policy. A brief history of the role of water availability will be used to acquaint us with the historical linkage of fresh water supply to California’s growth into the world’s 8th largest economy. We shall examine assumptions that once characterized natural resources and environmental systems as fully developed and sustainable but are now proving false. The Delta is widely perceived by many as in crisis. Why? A weakening infrastructure- some continuously used for over 100 years - coupled with deteriorating health of Delta fish species, and an institutional governance characterized as “too little too late” are some of the causes. Recognition of the Delta crisis provides an opportunity for DEL students to examine the several very different management strategies that have been proposed and/or implemented and to determine which of the various responses to the crisis have merit. The course uses a case study approach and students are encouraged to answer specific questions addressed in the course media. Individual and group activities are deployed to enable considerations of new directions for a changing future and how environmental management might make reform happen.