

# EBS/HYD 189 A: Agricultural Water Systems: Design, Operation and Analysis

3 Credits (Upper Division), Fall 2019

Location: TBC                      Lecture time: TR 12:10-13:30

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Water transfer systems have always played an important role in sustaining big cities and farming systems from ancient civilizations to our modern world. California is a good example of how the largest interconnected water system in the world has shaped the State economy by serving more than 30 million people and over 5,680,000 acres of farmland.

Moving water from reservoirs or mountain streams to where is actually needed is rarely easy or simple. An effective water distribution systems have to be carefully designed to satisfy the agronomic demand and resilient enough to respond to climatic extremes and future changes in the cropping pattern. Management of collective water systems also plays an important role in maintaining the operational sustainability of the system.

This course provides a broad introduction to the agronomic, engineering and economic aspects of water distribution systems required to divert water from the source to the field in the most efficient and productive manner. It is designed for students from a range of backgrounds interested in learning on topics related to i) agricultural water demand (estimation and forecasting), ii) engineering of pipeline and open channel systems (network modelling) iii) economic appraisal and operational optimization with limited resources and iv) water users associations and collective water resources management.

\*No prerequisites but experience with Microsoft Excel and basic GIS would be desirable