CS/EE 146. Control and Optimization of Networks. 9 units (2-0-7); third term. Prerequisites: Ma, 2, Ma 3, or instructor permission. This is a research-oriented course meant for senior undergraduates and graduate students. This year, we will focus on stochastic optimization and optimal control theory and their application to sustainability problems. In the US, about 84% of greenhouse gases are emitted from energy use. As uncertainty in power network increases due to renewable sources, stochastic optimization becomes an important tool for optimizing unit commitment and dispatch in the short term and plannig capacity expansion in the long term. The central theme of resource economics is the tradeoff of current exploitation and future use of natural resources that are exhaustible or slowly renewable such as minerals, fishery, and clean air. We study the application of optimal control theory and microeconomic theory to optimize this tradeoff as well as insurance against their depletion. Offered SP 2020-21.