Summary of Course Requirements

*** (Note: Core Courses and Electives listed are for the Engineering The Future Funding Program - Students must also satisfy their University's degree requirements regarding core courses and electives, which may differ from those listed here.)**

Descriptions for Core Courses (Required)			Elective Courses (must take 3)
UC Berkeley	**211A. Environmental Physical-Chemical Processes.** Fundamental concepts of physical-chemical processes that affect water quality in natural and engineered environmental systems. Focus is on developing a qualitative understanding of mechanisms as well as quantitative tools to describe, predict, and control the behavior of physical-chemical processes. Topics include reactor hydraulics and reaction kinetics, gas transfer, adsorption, particle characteristics, flocculation, gravitational separations, filtration, membranes, and disinfection.	**211B. Environmental Biological Processes.** Fundamental concepts of biological processes that are important in natural and engineered environmental systems, especially those affecting water quality. Incorporates basic fundamentals of microbiology into a quantifiable engineering context to describe, predict, and control behavior of environmental biological systems. Topics include the stoichiometry, energetics and kinetics of microbial reactions, suspended and biofilm processes, carbon and nutrient cycling, and bioremediation applications.	**CE 112 Enviromental Engineering Design** **CE 173 Groundwater Seepage** **CE 200A Environmental Fluid Mechanics** **CE 200C Transport and Mixing in the Environment** **CE 202A Vadose Zone Hydrology** **CE 203N Surface-Water Hydrology** **CE 210A Control of water-related pathogens** **CE 212 Water Quality Engineering** **CE 214 Environmental Analytical Chem** **CE 215 Process Engineering Laboratory** **CE 217 Environmental Chemical Kinetics** **CE 218A Air Quality Engineering** **CE 219 Contaminant transport processes**