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)
Northeastern University	**CIV G251 Environmental Biological Processes** Examines microbiology with emphasis on biological processes in environmental engineering applications. Topics include cell structure, morphology, cell nutrition and growth, energy transfer and utilization, aerobic and anaerobic microbial metabolism, biological wastewater process theory and modeling, biological nutrients removal, and disinfection of relevant microorganisms. Includes relevant laboratory exercises of treatment parameters used to monitor the biological processes, such as BOD, TOC, COD, gravimetric methods, and dissolved oxygen. Also covers enzyme kinetics and evaluation of kinetic coefficients for biotreatment. Offering:	**CIV G252 Water and Wastewater Treatment Processes** Covers design principles and theory of removal of impurities from water. Treatment unit operations and processes typically include aeration, screening, coagulation and flocculation, sedimentation, filtration, ion exchange, activated carbon adsorption, and disinfection. Covers wastewater treatment with emphasis on secondary municipal treatment processes including preliminary treatment, primary clarification, activated sludge systems, aerated lagoons, aeration and mixing theory, fixed film biological treatment systems, anaerobic treatment systems, residue utilization, and disposal.	**CIV G250 Environmental Chemistry** **CIV G253 Advanced Municipal and Industrial Wastewater Treatment Processes** **CIV G261 Surface Water Hydraulics and Quality Modeling** **CIV G262 Watershed Management.** **CIV G263 Groundwater Hydraulics and Quality Modeling** **CIV G270 Environmental Protection and Management** **CIV G271 Solid and Hazardous Waste Management** **CIV G272 Air Quality Management** **CIV G321 Geoenvironmental Engineering** **CIV G322 Engineering Geology** **IEM G200 Engineering Probability and Statistics** **CIV G260 Hydrology**