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)
Univ. of South Florida	**ENV 6519 Phisiochemical Treatment Processes -** Theory and design of phisico chemical operations and processes in engineered and natural systems. Analysis of unit operations and processes used in water and wastewater treatment including clhorination, activated carbon adwsorption, gas/liquid mass transfer, filtration, coagulation, flocculation, and settling.	**ENV 6667 Biological Processes in Environmental Engineering -** Theory and applications of environmental biotechnology pertaining primarily to biological wastewater treatment processes (e.g. activated sludge, biological nutrient removal, membrane bioreactors, trickling filters and rotating biological contactors, fluidized bed reactors, anaerobic digestion, and natural treatment systems), and bioremediation. Theoretical concepts emphasized include: basics of microbiology and biogeochemical cycling, electron and oxygen equivalents, stoichiometry, energetics and kinetics of microbial growth, substrate degredation kinetics, suspended and attached growth systems, analysis of completely-mixed and plug flow bioreactor systems.	**CGN 6933-002 Biological Principles of Env Engr** **ENV 6002 Physical and Chem. Princ.Of Env. Engr.** **ENV 6666 Aquatic Chemistry** **ENV 4417 Water Quality and Treatment** **PHC 6303 Community Air Pollution** **PHC 6301 Analysis of Water & Wastewater** **CGN 4933-002 Molecular Biology for Engineers** **ENV 5345 Solid Wastes Control** **PHC 7934 Environmental Modeling** **CGN 6933-003 Membrane Technology in Env. Eng.** **CGN 6933-004 Transport in Porous Media** **CGN 6933-005 Groundwater Engineering** **CGN 6933-006 Vadose Zone Hydrology** **CWR 6305 Urban Hydrology** **CWR 6534 Coastal and Esturary Modeling** **CWR 6533 Water Quality Modeling** **CGN 6933-001 Env Research Interd.Colloquium**