ENVIRONMENTAL & WATER RESOURCES ENGINEERING TRACK – EWRE

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(1) EWRE Core – students must complete at least four of the following courses.

- CE 5020 Introduction to Geographic Information Systems
- CE 5240 Groundwater Hydrology and Contaminant Transport
- CE 6130 Advanced Geotechnical Engineering
- CE 6220 Water Chemistry for Environmental Engineering
- CE 6230 Hydrology
- CE 6260 Environmental Microbiology and Biological Waste Treatment
- CE 6500 Physicochemical Processes
- EVGE 5850 Geochemistry
- SYS 6070 Environmental Systems Processes (not approved for students with a BS in CE)

(2) Systems, Sustainability, Resilience, and Risk (SSRR) electives – students must complete two courses from the following list:

- ARCH 5150 Global Sustainability
- CE 5000 Large-Scale Project Management
- CE 5500 GIS Resilience
- CE 6009 The Art and Science of Systems Modeling
- CE 6030 Green Engineering and Sustainability
- CE 6250 Environmental Systems Modeling and Management
- CE 6500 Hydroinformatics
- EVSC 7559 Coastal Resilience
- SYS 6001 Introduction to Systems Analysis and Design
- SYS 6050 Risk Analysis

(3) Technical electives may include any technical course at or above the 5XXX level, as approved by the student’s adviser. One of these may constitute a research or professional internship (i.e., CE 6995 - refer to the CE website for more details).

(4) Pre-requisites of the EWRE track include: college calculus through Ordinary Differential Equations, college chemistry, and college physics; plus, Introduction to Environmental Engineering (CE 2100 or equivalent), and a class in either water resources engineering (CE 3220 or equivalent) or water/wastewater treatment (CE 3100 or equivalent).

(5) Students may be permitted to modify this framework, pending approval of their academic advisor and the CE Director of Graduate Studies. Additionally, online courses from Virginia’s CGEP program may
be suitable to meet the requirements for this degree. See cgep.virginia.gov/courses for current course offerings.