

# Watershed Assessment and Restoration (Certificate)

The Department of Biological and Agricultural Engineering offers a Graduate Certificate Program in Watershed Assessment and Restoration.

## Objectives

- Provide a focus and formal program for students from many disciplines to pursue training in the technical and engineering aspects of designing and analyzing environmental systems with an emphasis on the watershed-scale.
- Provide students the opportunity to develop a solid foundation in engineering systems targeted at environmental issues, particularly related to non-point sources and their impact on water quality at the watershed-scale.
- Provide practicing engineers and other professionals a source of graduate level engineering education in the environmental field.

## Program Requirements

A minimum of 12 hours of coursework selected from the list below. One course can be selected from outside of BAE (up to 2 credit hours), but at least 9 credit hours must be BAE courses.

## More Information

Distance Website (<http://online-distance.ncsu.edu/program/graduate-certificate-in-design-and-analysis-of-environmental-systems-watershed-assessment-and-restoration/>)

## Admission Requirements

Applicants must have successfully completed an accredited undergraduate engineering program with a GPA of 3.0 (based on a 4.0 scale), or with an overall undergraduate GPA of at least 2.8 coupled with a 3.0 or higher in the undergraduate major, or be currently enrolled in a graduate engineering program. Applicants with a four-year undergraduate science degree who have successfully completed (with a C or better) calculus, differential equations, physics and chemistry will also be considered. A program that includes fluid mechanics or hydraulics is highly recommended. Environmental professionals who do not meet the above criteria may also qualify if appropriate experience can be demonstrated.

## Applicant Information

- **Delivery Method:** On-Campus, Online, Hybrid
- **Entrance Exam:** None
- **Interview Required:** None

## Application Deadlines

- **Fall:** July 15
- **Summer:** April 15

## Plan Requirements

Code	Title	Hours
<b>Core Courses</b>		<b>9</b>
Select three of the following courses:		
BAE 535	Precision Agriculture Technology	
BAE 536	GIS Applications in Precision Agriculture	
BAE 572	Irrigation and Drainage	
BAE 573	Introduction to Hydrologic and Water Quality Modeling	
BAE 575	Design of Structural Stormwater Best Management Practices	
BAE 578	Circular Approach to Manure Management	
BAE 577	Wetlands Design and Restoration	
BAE 580	Introduction to Land and Water Engineering	
BAE 581	Open Channel Hydraulics for Natural Systems	
BAE 582	Risk and Failure Assessment of Stream Restoration Structures	
BAE 583	Stream Corridor 3 Es: Ecohydraulics, Engineering and Ethics	
BAE 584	Introduction to Fluvial Geomorphology	
<b>Elective Course</b>		<b>3</b>
"Elective Course" will be determined in conjunction with the academic committee		
<b>Total Hours</b>		<b>12</b>