

Effective Fall 2021

2 Year MS & MSE Plan		Requirement*	Notes	Course #	Credits	Term
Engineering	Environmental Engineering Core	18CR from the Civil and Environmental Engineering Department	Required: CEE 581 CEE 582 CEE 591 CEE 881 (1 st Fall in program)	CEE 881		
				CEE 581		
				CEE 582		
				CEE 591		
		12CR from within one of the following Environmental Engineering Majors: (courses on next page)	Choose one: A) Ecohydrology B) Water Quality Process Engineering C) Water Quality and Resources Engineering			
		3CR of approved Mathematics	See Env. Eng. dept. requirements and Cognates (next page)			
School for Environment and Sustainability	AS CORE	9-12CR in Aquatic Sciences (courses on next page)	One course each from: 1) Organismal Biology 2) Ecosystem Ecology 3) Ecosystem Modeling			
	EAS Core	EAS 509 (Natural Systems Core) EAS 510(Social Systems Core) or 3CR from the <u>*Social Systems Distribution list.</u>				
		<u>*IAMS Requirement</u> Two courses; 3CR minimum				
	Analytics	2 Analytics courses	EAS 538 or approved alternate and one additional Analytics course			
	Capstone*	Students <u>are not</u> expected to complete a capstone, but could petition to do a thesis/practicum or project*	At most 6 credit hours of EAS 701 (Master's Project) or EAS 702 (Master's Practicum) or At most 12 credits of EAS 700 (Master's Thesis)			
		Total "EAS" credits - 25				
TOTALS		Total "CEE" credits - 18				
		54 credits total for both				

*IAMS and Social Systems Distribution courses can double-count with Core requirements but we do not double-count the actual credits.

Environmental Engineering

A) Ecohydrology

Choose four:

- CEE 428 – Introduction to Groundwater Hydrology
 - CEE 520 – Deterministic & Stochastic Models in Hydrology
 - CEE 521 – Open Channel Flow
 - CEE 522 – Sediment Transport
 - CEE 524 – Environmental Turbulence
- or
- CEE 525 – Turbulent Mixing in Buoyant Flows
 - CEE 527 – Coastal Hydraulics
 - CEE 590 – Stream, Lake, and Estuary Analysis
 - CEE 593 – Environmental Soil Physics
 - CEE 624 – Restoration Fundamentals & Practice in Aquatic Systems

B) Water Quality Process Engineering

Required:

- CEE 580 – Physical Chemical Processes in Environmental Engineering
- CEE 592 – Biological Processes in Environmental Engineering

Choose two:

- CEE 428 – Introduction to Groundwater Hydrology
 - CEE 583 – Surface & Interfaces in Aquatic Systems
 - CEE 593 – Environmental Soil Physics
 - CEE 594 – Environmental Soil Chemistry
 - CEE 693 – Environmental Molecular Biology
- Approved CHEM or BIOLCHEM or ChE or AOSS elective

C) Water Quality and Resources Engineering

Choose at least one:

- CEE 521 – Open Channel Flow
- CEE 522 – Sediment Transport

Choose at least one:

- CEE 580 – Physical Chemical Processes in Environmental Engineering
- CEE 592 – Biological Processes in Environmental Engineering

Choose up to two (only one of CEE 524 or CEE 525 may be taken):

- CEE 428 – Introduction to Groundwater Hydrology
- CEE 501.041 – Decentralized Water Supply, Hygiene, and Sanitation
- CEE 520 – Deterministic and Stochastic Models in Hydrology
- CEE 524 – Environmental Turbulence

or

- CEE 525 – Turbulent Mixing in Bouyant Flows
- CEE 526 – Design of Hydraulic Systems
- CEE 573 – Data Analysis
- CEE 597 – Environmental Organic Chemistry
- CEE 624 – Restoration Fundamentals & Practice in Aquatic Systems

Natural Resources and Environment Aquatic Sciences

1) Organismal Biology

Choose one:

- EAS 409 – Ecology of Fishes OR
- EEB 486 – Biology & Ecology of Fishes (UMBS)
- EAS 422 – Biology of Fishes
- EEB 457 – Algae in Freshwater Systems
- EAS 516 – Aquatic Entomology

2) Ecosystem Ecology

Choose one:

- EAS 476 – Ecosystem Ecology

- EEB 483 – Limnology
- EAS 520 – Fluvial Ecosystems
- 3) Ecosystem Modeling
 - Choose one:
 - EAS 534 – GIS and Landscape Modeling
 - EEB 401 – Interrogating Data with Models

Integrated Analytic Methods and Skills Requirement

Students are required, at some point during their time enrolled in the program, to take 2 courses composing at least 3 credits from a faculty-approved list of courses that focus on integrative analytic methods and skills.