

Effective Fall 2010

2 Year MS & MSE Plan		Requirement*	Notes	Course #	Credits	Term
<b>Engineering</b>	<b>Civil Engineering Core</b>	15CR from the Civil and Environmental Engineering Department	Required: CEE 520 CEE 521 CEE 522	CEE 520		
				CEE 521		
				CEE 522		
		Minimum of 2 additional CEE courses in Environmental and Water Resource Engineering	See List A for sample of approved courses (next page)			
<b>Natural Resources and Environment</b>	<b>AS CORE</b> <i>[Plan-specific requirement]</i>	9-12CR in Aquatic Sciences (courses on next page)	One course each from: 1) Organismal Biology 2) Ecosystem Ecology 3) Ecosystem Modeling			
	<b>NRE Core</b> <i>[School-wide requirement]</i>	NRE 509 NRE 510 NRE 580	10CR in total			
	<b>Analytics</b> <i>[School-wide requirement]</i>	2 Analytics courses	NRE 538 or approved alternate and one additional Analytics course			
	<b>Opus*</b>	Students are <b>not</b> expected to complete an Opus, but could petition to do a thesis/practicum or project*	At most 6CR of NRE 700/701			
	<b>Cognates</b> <i>[Rackham requirement]</i>		Please see next page for cognate requirement information			
<b>TOTALS</b>	<b>TOTAL CREDIT HOURS BY SCHOOL</b>		<b>“NRE” – Minimum 25CR</b>			
			<b>“CEE” – Minimum 15CR</b>			
	<b>TOTAL CREDIT HOURS</b>		<b>Minimum 54 Credit Hours</b>			

\*Any waiver or substitution of degree requirement must be approved by the appropriate faculty and submitted to OAP

## A) Civil Engineering

*Sample of Environmental and Water Resources courses (more available, see advisor):*

CEE 524 (3)	Environmental Turbulence (W)
CEE 527 (3)	Coastal Hydraulics (F)
CEE 580 (3)	Physicochemical Processes in Environmental Engineering (W)
CEE 581 (3)	Aquatic Chemistry (F&W)
CEE 582 (3)	Environmental Microbiology (F)
CEE 586/NRE 557 (3)	Industrial Ecology (W)
CEE 590 (3)	Stream, Lake, and Estuary Analysis
CEE 592 (3)	Biological Processes in Environmental Engineering (W)
CEE 624 (3)	Restoration Fundamentals and Practice in Aquatic Systems (F)

## Natural Resources and Environment Aquatic Sciences

### 1) Organismal Biology

*Choose one:*

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

### 2) Ecosystem Ecology

*Choose one:*

- NRE 476 – Ecosystem Ecology
- EEB 483 – Limnology
- NRE 520 – Fluvial Ecosystems

### 3) Ecosystem Modeling

*Choose one:*

- NRE 534 – GIS and Landscape Modeling
- EEB 401 – Interrogating Data with Models

## Cognates

SNRE – Minimum 4 credits outside SNRE. Can be fulfilled with CEE coursework.

CEE – 6 credits of non-CEE coursework. Can be fulfilled with one advanced Mathematics course (proper choice of SNRE Analytical courses can also satisfy this requirement) and one SNRE course.