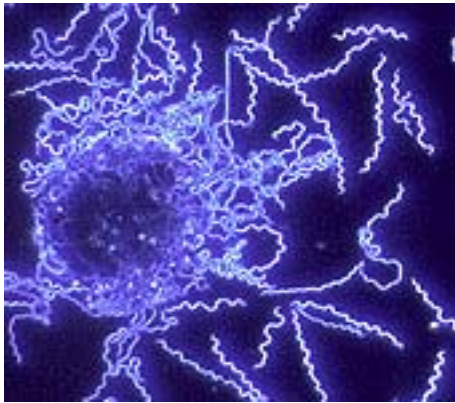


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# ENVIRONMENTAL AND WATER RESOURCES ENGINEERING

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## DEPARTMENT OF CIVIL AND MATERIALS ENGINEERING



*Electron micrograph showing fluorescently labeled microorganisms in environmental samples*

**UIC**

UNIVERSITY OF  
ILLINOIS AT CHICAGO

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## DEGREE PROGRAMS

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The Department of Civil and Materials Engineering has programs of study in environmental engineering leading to the **Master of Science** and **Doctor of Philosophy in Engineering** degrees. The curriculum includes four core courses required of every student and a variety of fundamental and applied design electives in the fields of water and wastewater treatment, waste management, air quality, and water resources.

Masters degrees require 36 credit hours. For thesis option, this typically comprises 6 courses (three at 500-level) plus 12 thesis credits. Ph.D. students are required to take 5 additional courses and thesis credits. Courses are offered in the late afternoon/evening to accommodate working professionals in the Chicago area.

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## CURRICULUM

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Environmental Engineering core courses:

1. CEMM 420 Environmental Analysis Laboratory
2. CEMM 506 Physical Chemical Principles
3. CEMM 521 Environmental Microbiology
4. Either CEMM 421 Water Treatment Design, CEMM 422 Wastewater Treatment Design or CEMM 428 Groundwater Hydrology and Contaminant Transport Modeling
5. CEMM 5XX Lake and Watershed Management

**The following electives are offered  
(all are 4 credits unless otherwise noted):**

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## FUNDAMENTAL PRINCIPLES

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- CEMM 415 Environmental Geotechnology
- CEMM 506 Physical Chemical Principles
- CEMM 521 Environmental Microbiology
- CEMM 523 Environmental Organic Chemistry (**3 credits**)
- CEMM 524 Water Chemistry (**3 credits**)
- CEMM 594 Biogeochemistry Seminar (**1 credit**)

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## WATER AND WASTEWATER TREATMENT

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- CEMM 420 Environmental Analysis Laboratory
- CEMM 421 Water Treatment Design
- CEMM 422 Wastewater Treatment Design
- CEMM 525 Bioremediation Design

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## WATER AND WASTE MANAGEMENT

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- CEMM 425 Environmental Remediation Engineering
- CEMM 516 Design of Landfills and Impoundments
- CEMM 518 Pollution Prevention Engineering
- CEMM 5XX Lake and Watershed Management

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## AIR QUALITY

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- CEMM 419 Air Quality Management I (**3 credits**)
- CEMM 526 Air Quality Management II (**3 credits**)

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## WATER RESOURCES

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- CEMM 427 Engineering Hydrology
- CEMM 428 Groundwater Hydrology and Contaminant Transport Modeling
- CEMM 5XX Vadose Zone Hydrology

### Tentative Course Offerings 2003-2005

Fall 2005	Spring 2006
	CEMM 521 Env. Microbiology
CEMM 415 Environmental Geotechnology	CEMM 516 Landfills and Impoundments
CEMM 422 Wastewater Treatment Design	
CEMM 506 Physical Chemical Principles	CEMM 421 Water Treatment Design
CEMM 420 Env Analysis Lab	CEMM 518 Pollution Prevention
CEMM 422 Wastewater Treatment Design	CEMM 524 Water Chemistry

Fall 2007	Spring 2008
CEMM 521 Environmental Biotechnology	CEMM 422 Water Treatment Design
	CEMM 428 GW Contaminant Transport
CEMM 420 Env Analysis Lab	CEMM 506 Physical Chemical Principles
CEMM 425 Environmental Remediation	
	CEMM 518 Pollution Prevention
CEMM 5xx Lake Management (NEW)	CEMM 523 Env Organic Chemistry

In addition, the following courses are offered frequently:

EOHS 5XX Risk Assessment

CEMM 419 Air Quality Management I

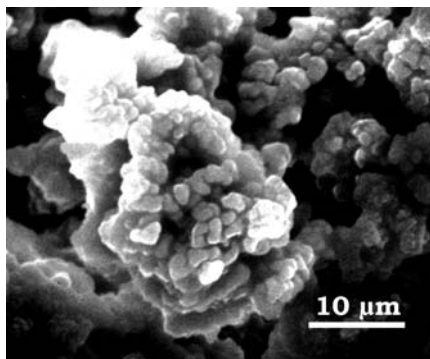
CEMM 526 Air Quality Management II

### RESEARCH

The University of Illinois-Chicago is a Research I University with over **\$250 million in annual research expenditures**. The research facilities in Environmental Engineering at UIC are state of the art. We have recently finished a \$1 million remodeling of the laboratories and they are outfitted with the latest research instrumentation. All students doing a thesis option are required to perform research in their chosen area under the supervision of their faculty advisor. Research programs of the faculty are outlined in their respective webpages.

### FINANCIAL ASSISTANCE

Financial support from traineeships and research assistantships are available. Full time graduate students are typically supported by external grants by environmental engineering faculty.



Electron micrograph showing fine structure of soot particle deposit used in environmental research at UIC

### FACULTY

**Christophe Darnault, Ph.D.** Assistant professor: Hydrology and Water Resources Engineering, Watershed Management, Agriculture and Biotechnology

**Amid Khodadoust, Ph.D.** Assistant professor: Water treatment, physical/chemical processes for hazardous waste treatment and remediation

**Krishna Reddy, Ph.D., P.E.** Associate Professor: Geoenvironmental engineering, remediation and landfill design

**Karl Rockne, Ph.D., P.E.** Assistant professor: Applied microbiology, wastewater treatment, pollutant fate in air, sediment, and water

**Thomas Theis, Ph.D., P.E.** Professor and Director, Institute for Environmental Science and Policy: Aquatic chemistry, environmental systems analysis, life cycle analysis

*For further information, please see:*

[www.uic.edu/depts/cme/people/faculty/cdarnault](http://www.uic.edu/depts/cme/people/faculty/cdarnault)

[www.uic.edu/depts/cme/people/faculty/akhodado](http://www.uic.edu/depts/cme/people/faculty/akhodado)

[www.uic.edu/depts/cme/people/faculty/kreddy](http://www.uic.edu/depts/cme/people/faculty/kreddy)

[www.uic.edu/depts/cme/people/faculty/krockne](http://www.uic.edu/depts/cme/people/faculty/krockne)

[www.uic.edu/depts/cme/people/faculty/theist](http://www.uic.edu/depts/cme/people/faculty/theist)



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