

# ENVIRONMENTAL REMEDICATION AND MANAGEMENT, M.S.

The UW–Madison Department of Soil Science is one of the most prominent soil science departments in the United States. It is globally renowned for its excellence in research and education. The department implements the Wisconsin Idea to the extended community and provides all generations with an appreciation of the soil environment as a vital resource and understanding of the scientific basis of the environment.

The *Environmental Remediation & Management* program provides the skills to understand and help solve environmental contamination problems. These solutions improve environmental and community health, facilitate sustainable growth, and revitalize urban centers. With courses designed in cooperation with industry experts, your in-depth knowledge related to soil and groundwater will be complemented by effective written and oral communication skills as well as personnel and project management training. In just one year of study, you will gain the foundation and knowledge to bring positive change and begin your career to project management and business development-level positions within the field of soil and environmental remediation.

## ADMISSIONS

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website.

Graduate admissions is a two-step process between academic programs and the Graduate School. **Applicants must meet** the minimum requirements (<https://grad.wisc.edu/apply/requirements/>) **of the Graduate School as well as the program(s)**. Once you have researched the graduate program(s) you are interested in, apply online (<https://grad.wisc.edu/apply/>).

Requirements	Detail
Fall Deadline	May 30
Spring Deadline	This program does not admit in the spring.
Summer Deadline	This program does not admit in the summer.
GRE (Graduate Record Examinations)	May be required in certain cases; consult program.*
English Proficiency Test	Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements ( <a href="https://grad.wisc.edu/apply/requirements/#english-proficiency">https://grad.wisc.edu/apply/requirements/#english-proficiency</a> ).
Other Test(s) (e.g., GMAT, MCAT)	n/a
Letters of Recommendation Required	2

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The GRE is not needed for students with a 3.00 or higher GPA; applicants with a GPA below 3.00 may be considered under special circumstances and must also submit Graduate Record Examination (GRE) scores.

Although applications for the MS in Environmental Remediation and Management will be accepted on a rolling basis, applications received by the Fall deadline each year will be given preference for admissions purposes and tuition assistance. Applications are submitted online (<https://apply.grad.wisc.edu/>) through the UW-Madison Graduate School. Applicants will need to create a username and password to access the application system. For current or former UW students, this will be a new account that does not use your NetID. When applying for our MS program select the fall term for the calendar year you are applying for, and then choose Environmental Remediation and Management in the drop-down tab. Prospective students who apply by the Fall deadline will be informed of their admissions status by late June.

A foundation in the basic sciences is necessary and the program requires all students to have successfully completed the pre-requisite or equivalent coursework listed below. Admissions with deficiencies is possible, but is likely to delay completion of graduate studies.

Code	Title	Credits
MATH 221	Calculus and Analytic Geometry I	5
CHEM 103	General Chemistry I	4
CHEM 104	General Chemistry II	5

Applicants must have received a bachelor's degree from an accredited four-year institution with an undergraduate GPA of 3.0 or higher. Applicants with GPAs below 3.0 may be considered for admission under special circumstances, and they must provide GRE scores. For those who have GPAs at 3.0 or above, GRE scores are not required for admission to the MS in Environmental Remediation and Management.

Candidates with diverse professional and academic backgrounds are encouraged to apply. Admissions decisions will be based on the entirety of each applicant's credentials. Complete applications will include all items below.

- Reasons for graduate study/statement of interest in this program or field
- Two letters of professional recommendation; one letter from a faculty member and one letter from a university advisor from the undergraduate institution are preferred. For applicants with relevant work experience, a letter from current or former employer is recommended. Although the online UW-Madison application gives you the option of adding three references, only two references are required for this program.
- One copy of undergraduate transcripts submitted electronically in the application
- Professional credentials/resume
- GRE scores (dependent on undergraduate GPA)

For foreign students, TOEFL or IELTS scores are also needed. The minimum TOEFL score required is 92 for the internet-based test (iBT) and 580 for the paper-based test (PBT). The minimum IELTS score required is 7.0. Applicants with language scores below these requirements may be considered for program admission under special circumstances. The UW-Madison Graduate School also requires proof of sufficient tuition funds for foreign applicants accepted into the program.

## FUNDING

### GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (<https://grad.wisc.edu/funding/>) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

### PROGRAM RESOURCES

Students enrolled in this program are not eligible to receive tuition remission from graduate assistantship appointments at this institution.

Scholarship opportunities may be available to qualified applicants. Contact the Graduate Coordinator for further details.

### FEDERAL LOANS

Students who are U.S. citizens or permanent residents may be eligible to receive some level of funding through the federal direct loan program. These loans are available to qualified graduate students who are taking at least 4 credits during the fall and spring semesters, and 2 credits during summer. Private loans are also available. Learn more about financial aid at their website (<https://financialaid.wisc.edu/>).

#### International student services funding and scholarships

For information on International Student Funding and Scholarships visit the ISS website (<https://iss.wisc.edu/students/new-students/funding-scholarships/>).

Scholarship opportunities may be available to qualified applicants. Contact the Graduate Coordinator for further details.

## REQUIREMENTS

### MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirements>), in addition to the program requirements listed below.

### MAJOR REQUIREMENTS

#### MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	Yes	Yes

#### Mode of Instruction Definitions

**Accelerated:** Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

**Evening/Weekend:** Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

**Face-to-Face:** Courses typically meet during weekdays on the UW–Madison Campus.

**Hybrid:** These programs combine face-to-face and online learning formats. Contact the program for more specific information.

**Online:** These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

### CURRICULAR REQUIREMENTS

Requirement Detail	
Minimum Credit Requirement	30 credits
Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	15 credits must be graduate-level coursework. Details can be found in the Graduate School's Minimum Graduate Coursework (50%) Requirement Policy: <a href="https://policy.wisc.edu/library/UW-1244">https://policy.wisc.edu/library/UW-1244</a> ( <a href="https://policy.wisc.edu/library/UW-1244/">https://policy.wisc.edu/library/UW-1244/</a> )
Overall Graduate GPA Requirement	3.00 GPA required. This program follows the Graduate School's policy: <a href="https://policy.wisc.edu/library/UW-1203">https://policy.wisc.edu/library/UW-1203</a> ( <a href="https://policy.wisc.edu/library/UW-1203/">https://policy.wisc.edu/library/UW-1203/</a> ).
Other Grade Requirements	The Graduate School requires that students maintain a graduate grade-point average (GPA) of 3.00 (on a 4.00 scale) for all graduate courses (excluding research). Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

Assessments and Examinations No formal examination is required.

Language Requirements No language requirements.

### REQUIRED COURSES

Code	Title	Credits
<b>FALL</b>		
SOIL SCI 430	Environmental Soil Contamination	3
SOIL SCI 730	Colloquium: Environmental Remediation and Management	1
GEOSCI/G L E 627	Hydrogeology	4
LSC 560	Scientific Writing	3
<b>SPRING</b>		
SOIL SCI 330	Hazardous Waste Operations and Emergency Response (HAZWOPER) and Field Safety Training	1
SOIL SCI/ ENVIR ST 575	Assessment of Environmental Impact	3
SOIL SCI/ CIV ENGR/ M&ENVTOX 631	Toxicants in the Environment: Sources, Distribution, Fate, & Effects	3
SOIL SCI 730	Colloquium: Environmental Remediation and Management	1

CIV ENGR/ G L E 635	Remediation Geotechnics	3
LSC 625	Risk Communication	3
<b>SUMMER</b>		
SOIL SCI 630	Field Methods for Environmental Characterization, Analysis, and Monitoring	2
SOIL SCI 730	Colloquium: Environmental Remediation and Management	1
E P D/ACCT I S/ GEN BUS 781	Financial and Business Acumen	1
E P D/GEN BUS/ OTM 784	Project Management Essentials	1
<b>Total Credits</b>		<b>30</b>

Students in this program may not take courses outside the prescribed curriculum without faculty advisor and program director approval.

Students in this program cannot enroll concurrently in other undergraduate or graduate degree programs.

## POLICIES

### GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (<https://grad.wisc.edu/acadpolicy/>) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

### MAJOR-SPECIFIC POLICIES

#### PRIOR COURSEWORK

##### Graduate Work from Other Institutions

Students will not be permitted to use credits from previously earned graduate coursework.

##### UW–Madison Undergraduates

With program approval, up to 6 credits of coursework listed in the required courses grid may be counted toward the course requirements. No credits may be counted toward the minimum graduate residence credit requirement. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

##### UW–Madison University Special

With program approval, and payment of the difference in tuition, students are allowed to count up to 15 credits of coursework numbered 300 or above taken as a UW–Madison Special student toward the minimum graduate residence credit requirement and the minimum graduate degree credit requirement. These credits may be counted toward the minimum graduate coursework (50%) requirement if they are in courses numbered 700 or above. Coursework earned five or more years prior to admission is not allowed to satisfy requirements.

### PROBATION

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above). This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

1. Good standing (progressing according to standards; any funding guarantee remains in place).
2. Probation (not progressing according to standards but permitted to enroll; loss of funding guarantee; specific plan with dates and deadlines in place in regard to removal of probationary status).
3. Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor or program).

A semester GPA below 3.0 will result in the student being placed on academic probation. If a semester GPA of 3.0 is not attained during the subsequent semester of full time enrollment (or 12 credits of enrollment if enrolled part-time), this will be deemed unsatisfactory progress and the student may be dismissed from the program or allowed to continue for one additional semester based on advisor appeal to the Graduate School.

### ADVISOR

Every student in the program will be required to have an advisor. Program staff will work with the student to identify an advisor during the fall semester. Once an advisor has been identified, the student is expected to maintain communication with their advisor to ensure they are making satisfactory progress toward their degree.

### CREDITS PER TERM ALLOWED

Students will follow the prescribed course sequence.

### TIME LIMITS

This program follows the Graduate School's Time Limits policy. (<https://policy.wisc.edu/library/UW-1221/>)

### GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (<https://doso.students.wisc.edu/bias-or-hate-reporting/>)
- Graduate Assistantship Policies and Procedures (<https://hr.wisc.edu/policies/gapp/#grievance-procedure>)
- Hostile and Intimidating Behavior Policies and Procedures (<https://hr.wisc.edu/hib/>)
  - Office of the Provost for Faculty and Staff Affairs (<https://facstaff.provost.wisc.edu/>)
- Dean of Students Office (<https://doso.students.wisc.edu/>) (for all students to seek grievance assistance and support)
- Employee Assistance (<http://www.eao.wisc.edu/>) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
- Employee Disability Resource Office (<https://employeeabilities.wisc.edu/>) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (<https://grad.wisc.edu/>) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (<https://compliance.wisc.edu/>) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office of Student Conduct and Community Standards (<https://conduct.students.wisc.edu/>) (for conflicts involving students)

- Ombuds Office for Faculty and Staff (<http://www.ombuds.wisc.edu/>) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (<https://compliance.wisc.edu/titleix/>) (for concerns about discrimination)

### College of Agricultural and Life Sciences: Grievance Policy

In the College of Agricultural and Life Sciences (CALs), any student who feels unfairly treated by a member of the CALs faculty or staff has the right to complain about the treatment and to receive a prompt hearing. Some complaints may arise from misunderstandings or communication breakdowns and be easily resolved; others may require formal action. Complaints may concern any matter of perceived unfairness.

To ensure a prompt and fair hearing of any complaint, and to protect the rights of both the person complaining and the person at whom the complaint is directed, the following procedures are used in the College of Agricultural and Life Sciences. Any student, undergraduate or graduate, may use these procedures, except employees whose complaints are covered under other campus policies.

1. The student should first talk with the person at whom the complaint is directed. Most issues can be settled at this level. Others may be resolved by established departmental procedures.
2. If the student is unsatisfied, and the complaint involves any unit outside CALs, the student should seek the advice of the dean or director of that unit to determine how to proceed.
  - a. If the complaint involves an academic department in CALs the student should proceed in accordance with item 3 below.
  - b. If the grievance involves a unit in CALs that is not an academic department, the student should proceed in accordance with item 4 below.
3. The student should contact the department's grievance advisor within 120 calendar days of the alleged unfair treatment. The departmental administrator can provide this person's name. The grievance advisor will attempt to resolve the problem informally within 10 working days of receiving the complaint, in discussions with the student and the person at whom the complaint is directed.
  - a. If informal mediation fails, the student can submit the grievance in writing to the grievance advisor within 10 working days of the date the student is informed of the failure of the mediation attempt by the grievance advisor. The grievance advisor will provide a copy to the person at whom the grievance is directed.
  - b. The grievance advisor will refer the complaint to a department committee that will obtain a written response from the person at whom the complaint is directed, providing a copy to the student. Either party may request a hearing before the committee. The grievance advisor will provide both parties a written decision within 20 working days from the date of receipt of the written complaint.
  - c. If the grievance involves the department chairperson, the grievance advisor or a member of the grievance committee, these persons may not participate in the review.
  - d. If not satisfied with departmental action, either party has 10 working days from the date of notification of the departmental committee action to file a written appeal to the CALs Equity and Diversity Committee. A subcommittee of this committee will make a preliminary judgement as to whether the case merits further investigation and review. If the subcommittee unanimously determines that the case does not merit further investigation

and review, its decision is final. If one or more members of the subcommittee determine that the case does merit further investigation and review, the subcommittee will investigate and seek to resolve the dispute through mediation. If this mediation attempt fails, the subcommittee will bring the case to the full committee. The committee may seek additional information from the parties or hold a hearing. The committee will present a written recommendation to the dean who will provide a final decision within 20 working days of receipt of the committee recommendation.

4. If the alleged unfair treatment occurs in a CALs unit that is not an academic department, the student should, within 120 calendar days of the alleged incident, take his/her grievance directly to the Associate Dean of Academic Affairs. The dean will attempt to resolve the problem informally within 10 working days of receiving the complaint. If this mediation attempt does not succeed the student may file a written complaint with the dean who will refer it to the CALs Equity and Diversity Committee. The committee will seek a written response from the person at whom the complaint is directed, subsequently following other steps delineated in item 3d above.

### OTHER

Not applicable.

## PROFESSIONAL DEVELOPMENT

### GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School's professional development resources (<https://grad.wisc.edu/pd/>) to build skills, thrive academically, and launch your career.

## LEARNING OUTCOMES

1. Identify the nature, source, and mobility of environmental contaminants.
2. Demonstrate understanding of the regulatory requirements pertinent to the assessment, investigation and remediation of environmental contamination.
3. Create reports for the assessment, investigation, and closure of environmentally contaminated sites.
4. Collect environmental soil and groundwater samples, prepare samples for analysis, and interpret analytical data.
5. Assess contaminated soil and groundwater remediation strategies.
6. Communicate project information to technical and non-technical stakeholders.
7. Manage projects in environmental assessment, investigation, and remediation.

## PEOPLE

### Alfred Hartemink

Professor, Department of Soil Science

### Francisco Arriaga

Associate Professor, Department of Soil Science and Program Manager, Environmental Remediation and Management MS

### Phillip Barak

Professor, Department of Soil Science

**Troy Runge**

Professor and Chair, Department of Biological Systems Engineering

**Dominique Brossard**

Professor and Chair, Department of Life Sciences Communications

**Michael Cardiff**

Associate Professor, Department of Geoscience

**Doug Soldat**

Professor and Chair, Department of Soil Science