Lumen Structures Proposal System

New Proposal

Date Submitted: 08/13/19 9:48 am

Viewing: **MS - Environmental Remediation and Management**

Last edit: 08/13/19 9:48 am

Changes proposed by: kmwassarman

Request Type: Notice of Intent (new degree/major)
Home Department: Soil Science (SOIL SCI)
School/College: College of Agricultural and Life Sciences
Title: MS - Environmental Remediation and Management
Request Details: Notice of intent to plan a Master of Science in Environmental Remediation & Management

Program Details
Degree name/major: MS/ Environmental Remediation & Management
Academic home: Department of Soil Science, College of Agricultural and Life Sciences
Mode of delivery: Face-to-face
Primary faculty contact: Alfred Hartemink, Professor and Chair, Dept. Soil Science

The planning for this new program was driven by the need for trained individuals to oversee the environmental assessment, remediation, and redevelopment of abandoned commercial and industrial sites with unknown levels of soil and water contamination. The program will provide in-depth physical science knowledge related to soil and groundwater and, through coursework in project management, provide a foundation for rising to project management and business development level positions within the field of environmental remediation. We are enthusiastic for the opportunity to be leaders in offering this professional training to our students.

Upload Form: 
- Approval to Plan_MS Env Rem final copy.pdf
- Dean's Memo Transmittal to Provost - Environmental Remediation NOI.pdf
- Approval to Plan_MS Env Rem_072219 copy.docx

Supporting Documents: 
- 131 Program Model-Env Rem_rev_Mar_4 copy - no macros.xlsx
Approval to Plan

Master of Science in Environmental Remediation & Management

Program Details

Degree name/major: MS/ Environmental Remediation & Management
Academic home: Department of Soil Science, College of Agricultural and Life Sciences
Mode of delivery: Face-to-face
Primary faculty contact: Alfred Hartemink, Professor and Chair, Dept. Soil Science

Program Description

In the US and internationally, thousands of abandoned commercial and industrial sites exist that have unknown levels of soil and groundwater contamination presenting complex situations for public and private interests. In addition to their potential for affecting community health, these sites present significant barriers to the growth and revitalization of urban neighborhoods. As outlined in the US Environmental Protection Agency roadmap, remediation and redevelopment of these sites involves understanding state and federal regulations, conducting site assessments and investigations, and, if required, selecting soil and groundwater remediation or containment technologies to achieve case closure.

Many phases of environmental assessment, remediation, and redevelopment work are within the purview of environmental scientists within consulting companies driven to efficiently meet regulatory compliance for their clients prior to property transfer or redevelopment. This work often requires a diverse skillset to meet not only the technical requirements of environmental compliance but also to address community concerns, understand and facilitate funding opportunities for site cleanup and redevelopment, and manage field personnel and projects. To address these needs, the program will provide advanced training in the technical aspects of environmental assessment and remediation, address the need for effective written and oral communication, and provide personnel and project management training. The program will provide in-depth physical science knowledge related to soil and groundwater and, through coursework in project management, provide a foundation for rising to project management and business development level positions within the field of environmental remediation. Additionally, Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) 40-hour training, required for workers involved in remediation work, will be provided as part of the program, streamlining the hiring and training process for employers.

Need for Program

There is strong national market demand for the environmental science skills proposed within this program. The UW-Madison Division of Continuing Studies (DCS) performed an analysis using Burning Glass Technologies real-time job market analytics software and found over 9,000 jobs that require one or more of the environmental remediation-related skills and that are open to applicants with a Master’s degree. These jobs are in a variety of occupations and industries and most of those occupations are projected to grow between 2016 and 2026. In general, there are a greater number of job postings within CA, TX, VA, NY, and NJ, than in the Midwest. However, within Wisconsin, Madison has an approximately four times higher demand than the national average, while at the same time, there is a gap in graduate
programs specializing in environmental remediation in the Midwest (see below), indicating that the Madison-Milwaukee area should be a strong market for the degree.

According to the National Center for Education Statistics, there has also been growing interest in environmental technology/science Master’s degrees since 2012 as seen by increasing degree conferrals. In keeping with this trend, UW-Madison’s Environmental Sciences BS degree conferrals have doubled over the last 5 years to 61 conferrals in 2017-18 and we anticipate recruiting from this major. Master’s level conferrals are also seeing growth. DCS performed a competitive market analysis for other existing Master’s degree programs based on degree name, degree conferred, curriculum, and model similarity. Although over 93 institutions offer programs in environmental health and engineering-related fields, market share is spread out and most institutions are located on the east and west coasts indicating a lack of market saturation in the Midwest or leadership from an online institution. Therefore, the proposed program will capitalize on the Midwest market and also stands alone offering field, project management, and communication experience through professionally-driven case studies.

Professional practitioners from within environmental consulting and engineering firms (SCS Engineers, True North Consultants, TRC Companies, Ayers and Associates, Cornerstone Environmental, Pace Analytical, WPS, Jacobs Consultancy, Cascade Environmental) and the Wisconsin Department of Natural Resources Remediation and Redevelopment Program have shown support and enthusiasm for the initial program design. Input from practitioners identified in-demand skills often lacking in new employees including field experience, OSHA 40-hour HAZWOPER training, regulatory knowledge, written and oral communication skills, and personnel and project management skills. We plan to develop the curriculum to include these skills and intend to maintain a working relationship with environmental professionals and regulators throughout the development and delivery of the program.

**Complement to existing offerings within the UW system**

No existing programs serve graduates with BS degrees outside of engineering by offering the in-depth technical, project management, and communications focus specific to a specialization in environmental assessment and remediation. Programs of interest within UW System include:

- **Master of Natural Resources, UW-Stevens Point:** A program focused on ecological principles of natural resources management and not the assessment and remediation of environmental contaminants. The program offers only one course (NRES 776) that is a potential overlap with the proposed program curriculum.
- **MS in Environmental Science & Policy, UW-Green Bay:** This program includes four areas of emphasis, including environmental policy and administration and environmental technology and analysis. The technology and analysis area prepares students to design and conduct scientific investigations, interpret data to make responsible decisions that solve environmental problems, and communicate effectively. Students can study concepts of environmental modeling and remediation, waste transformation, utilization and disposal as a part of their curriculum. This is a traditional two-year program and does not include field-based characterization and monitoring coursework, nor does it emphasize the project management and communication skills sought by environmental consulting hiring managers.
- **MS in Civil and Environmental Engineering, UW-Milwaukee:** This program requires a B.S. in engineering from an Accreditation Board for Engineering and Technology (ABET) accredited program, and allows students to take coursework in the environmental engineering and water resources specialty area. While environmental engineers do often work in environmental...
remediation, they represent only a subset of the discipline. The proposed program will primarily serve students with BS degrees outside of engineering.

- **Professional Science Master’s in Conservation Biology from UW-Stout:** This program focuses on the sustainability of biodiversity, and includes information on environmental laws and regulations with respect to ecosystems and does not provide training in environmental contamination or remediation.

- **MS in Sustainable Management, collaboration between UW-Green Bay, UW-Oshkosh, UW-Parkside, UW-Stout, and UW-Superior:** This program is primarily a non-technical management degree and does not include the technical assessment, remediation and compliance outcomes of the proposed program. The curriculum includes a single course in waste management and resource recovery.

Several UW-Madison programs focus on environmental issues and we expect to partner with many of these programs by incorporating courses into the proposed program, and offsetting revenue per credit. These programs include:

- **MS in Environmental Conservation, Nelson Institute:** This program offers two professional master’s degree options, Environmental Observation and Informatics (EOI) and Environmental Conservation. The conservation option focuses on conservation planning, land use policy and professional skills, while the EOI option offers earth sensing technology, data analytics and modeling, and geospatial analysis. We have discussed the proposed program with the Nelson Institute and have confirmed that there is no overlap in the curriculum and that there are many opportunities for synergistic collaboration between students in both programs.

- **MS in Environment and Resources, Nelson Institute:** This program allows students to pursue a broad range of environmental studies incorporating physical or biological science research with social sciences and humanities. The program does not include specific depth areas, but allows flexibility for students to create a course plan suited to address environmental problems identified in their individual research. This is an interdisciplinary thesis-based research program and does not offer the technical, communication, and management skills in the proposed program.

- **MS in Landscape Architecture, College of Letters and Science:** This program offers a specialization in Restoration Ecology and Ecological Design, which focuses on natural landscaping and plant community restoration and not the identification, assessment, and remediation of environmental contamination.

- **Master of Engineering in Civil and Environmental Engineering (online) and MS in Civil and Environmental Engineering, named option “Environmental Science and Engineering” (on campus) from the College of Engineering:** These programs offer coursework in the engineering design and analysis remediation and waste management technologies and require a B.S. in engineering from an ABET accredited program. Although there is some overlap in learning outcomes between these programs, the proposed program will not focus on engineering design and analysis skills. As such, the proposed program will be open to applicants with BS degrees outside of engineering and, therefore, will serve a currently untapped market. Through revenue sharing agreements, the proposed program will potentially incorporate two courses from these programs.

The mission of the College of Agricultural and Life Science is to advance and share knowledge, discover solutions and promote opportunities in food, agriculture, bioenergy, health and environment, and human wellbeing. A specific focus for healthy ecosystems is managing landscapes to help provide clean
water and air, mitigate climate change and promote biodiversity while building communities and offering economic gain. Similarly, CALS is committed to safe healthy food supply by ensuring runoff from soils and water supplies and the impact on human health. Lastly, economic and community development promotes the increasing ways our local economy is influenced by global markets. This brings both challenges and opportunities that affect people, businesses, communities and the environment. This strategic priority informs the Environmental Remediation degree by helping communities advance social and economic development while also being aware and knowledgeable of the policy and environmental impacts of proposed solutions. The proposed program will support CALS mission by preparing environmental scientists to apply technical and collaborative decision-making skills to promote community and economic development.

**Curriculum and learning outcomes**

Upon completing the program, students will be able to:

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 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.

The program is a 30-credit accelerated program with a duration of 12 months to include a fall, spring, and summer semester. The program staff will assist with internship placement to the extent of fostering relationships with internship companies and offering those connections to students. The program will work closely with students and placement partners to identify and match goals and expected outcomes.

**Required Courses: (New courses in bold)**

* Courses carry a 50% graduate course attribute

Toxicants in the Environment: Sources Distribution and Fate (Soil Science 631)
Assessment of Environmental Impact (Soil Science 575)*
Scientific Writing (LSC 560)*
Risk Communication (LSC 625)*
Project Management (EPD 784)
Presentation for Professionals (EPD 702)
Financial and Business Acumen (EPD 781)
Remediation Geotechnics (CEE/GLE 635)*
Hydrogeology (Geosci/GLE 627)*
HAZWOPER Training (existing online training or may incorporate as a 1-credit soil sci. course)
Colloquium (new 2-credit course in soil science)
Soil Science for Environmental Professionals (new 3-credit course in soil science)*
Characterization and Monitoring Technologies (new 3-credit course in soil science)*
Faculty and Staff

An Executive Program Committee with participation from the Department of Soil Science faculty will provide governance over program and academic issues. The core faculty and staff supporting development of this program include:

- Professors Alfred Hartemink, Joel Pedersen, and Steve Ventura, Department of Soil Science.
- Edward Boswell, Geoff Siemering, Department of Soil Science.
- Professors Steven Loheide, Matthew Ginder-Vogel, and Jim Tinjum, College of Engineering.
- Professor Troy Runge, Biological Systems Engineering.

Letters of Support

Letters of support from departments, schools/colleges, and other units with a substantial interest in the program are included in Appendix A.

Funding

This program is expected to be self-funded through tuition revenue within three years of development. Enrollment will begin with 15 students and increase until at least 50 students are supported each cohort. Revenue captured will be used to support tuition discounts and waivers, teaching assistantships, professional development, and new faculty hires within the department.

Table 1. Enrollment, direct program costs, and revenue projections for the proposed MS in Environmental Remediation and Management from development (2018-20) through five years of operation (2020-25).

<table>
<thead>
<tr>
<th>Item</th>
<th>Development</th>
<th>Launch and Grow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Credits taught</td>
<td>0</td>
<td>450</td>
</tr>
<tr>
<td>Tuition revenue</td>
<td>0</td>
<td>$495,000</td>
</tr>
<tr>
<td>CALS + Campus tax</td>
<td>0</td>
<td>($99,000)</td>
</tr>
<tr>
<td>Cost of instruction</td>
<td>0</td>
<td>($277,500)</td>
</tr>
<tr>
<td>Dept. instruction</td>
<td>0</td>
<td>$90,000</td>
</tr>
<tr>
<td>(cost savings)</td>
<td>(12,000)</td>
<td>($120,322)</td>
</tr>
<tr>
<td>Other costs</td>
<td>(12,000)</td>
<td>88,178</td>
</tr>
<tr>
<td>Revenue</td>
<td>(12,000)</td>
<td>88,178</td>
</tr>
</tbody>
</table>

\(a\) Cost of instruction assumes 30 credits taught at a cost of $600/credit

\(b\) Department instruction cost savings assumes 15 credits taught within the soil science department at a cost of $200/credit

Funding for program development is supported by CALS and DCS. The College will utilize standard Memoranda of Agreement for participating schools and colleges to share tuition revenue with participating departments and instructors. DCS has also completed market research and analysis, including a market demand study, competitive survey and naming study, and will build out marketing strategy and execution plans for program launch in 2020. The DCS Recruitment Team will create and implement program-specific recruiting plans, and support development of websites and other communication materials.
To Parties Concerned:

I write in my capacity as de facto chair of the Academic Programs in support of the proposal to obtain permission to plan the program: **Master of Science in Environmental Remediation.** Overall we think that will be useful addition to the offerings at UW Madison. In its present form we see it as compatible with our own professional programs. I note the disclaimer that this support is issued without detailed consideration the appropriate governance bodies in Nelson. This is done in the expectation of the opportunity to conduct a thorough review of the proposal when it will become available in Lumen.

We have met with Dr. Ed Boswell to discuss this proposal. We explored potential areas of competition and collaboration. In the balance, the Nelson Institute believes that the proposed program and our professional programs in Environmental Conservation are more likely to be collaborative than competitive.

The collaborative prospects for the proposed program arise because of intersection in at least two areas. The technical issues of soil remediation are relevant to many EC students interested in ecological restoration who could benefit from a soils expertise that is not presently part of the curriculum of EC. The named option in EC, Environmental Observation and Informatics (EOI), emphasizes the applied aspects of GIS and remote sensing, both topics that will of interest to students in the proposed program. We discussed the possibility of synergisms for example: sharing guest speakers, EC students doing laboratory visits to learn about how the detailed work of remediation is conducted, remediation students perhaps taking EOI courses or participating with EC students in field visits to areas of conservation interest, and the like.

We discussed that if in the future they drift toward a field generally known as “ecological restoration” there could be issues. This field is more general and of interest to a significant number of our current EC students. It has an emphasis on complete ecosystem restoration including the manipulation of macroscopic organisms (plants, animals) whereas the proposed degree would focus more on the soils, soil biota, and topography. We were assured that such a shift will not happen in the short run and if considered in the future would not be undertaken without in-depth consultation.

Sincerely,

Paul H. Zedler
Associate Director for Research and Education
8 April 2019

To: Kate Vanden Bosch, Dean, CALS
   Karen Wassarman, Associate Dean, CALS

From: John Karl Scholz, Dean

Re: Request for L&S Comment on Notice of Intent to Offer, MS-Environmental Remediation

Thank you for offering the College of Letters & Science an opportunity to review and offer comment on the CALS plan to develop and offer a new Master of Science Program in Environmental Remediation. We circulated this proposal to our departments in L&S that might be interested in this endeavor, to afford them an opportunity to offer counsel from their positions of expertise in plant biology, geoscience, landscape design and remediation, etc. These colleagues offered no comment, and when I discussed the proposal with the L&S Academic Planning Council, members noted the distinction made between Landscape Architecture’s work with respect to “natural landscaping and plant community restoration” and the proposed program’s focus on remediation of environmental contamination. Though these approaches intersect, they are certainly different, and that difference is essential to the distinct nature of the programs.

The L&S Academic Planning Council recommended that L&S support CALS’ proposal of this new program, and we look forward to seeing the more detailed Request for Authorization to Implement it. We wish you success in the next stage of the process.

CC: Ken Cameron, Professor and Chair, Botany
    Greg Downey, Associate Dean for the Social and Behavioral Sciences
    Ken Genskow, Professor and Chair, Planning & Landscape Architecture
    Elaine M. Klein, Associate Dean, Academic Planning
    Gloria Mari-Beffa, Associate Dean for the Natural Sciences
    Joseph Mason, Professor and Chair, Geography
    Greg Tripoli, Professor and Chair, Geoscience
April 10, 2019

Alfred Hartemink, PhD
Professor and Chair
Department of Soil Science
College of Agricultural and Life Sciences
University of Wisconsin-Madison

Dear Dr. Hartemink,

The Department of Civil and Environmental Engineering (CEE) has reviewed the proposal and offers our general support for the development of a professional Master of Science degree within the Department of Soil Science on the topic of environmental remediation. We have reviewed the Approval to Plan and are pleased with its collaborative direction. The proposed MS program appears to support the broad CALS mission to meet the demand for new educational programming in collaboration with institutional and industry partners, to provide healthy ecosystems, to promote health and wellness, and to stimulate economic development. Unless significant changes to the Approval to Plan are made during the campus governance process, our general support extends through the full proposal stage.

There are however a number of items that CEE would like to see addressed if this proposal moves forward. Specifically, CEE offers the following additional conditions of support:

- Please consider changing the name/title of the degree program. A degree title comparable to “Science and Management of Environmental Remediation” or “Environmental Remediation Science and Management” or “Practice of Environmental Remediation Science” is suggested. CEE currently has a MS degree program in Geotechnical Engineering in which many of the same courses can be taken. It is important to CEE that there is a clear differentiation between the CEE and Soil Science degree programs. A name change will potentially help better inform the planning process and detailed curriculum requirements as well as clearly differentiate the degree programs.
- Please add the “Geotechnical Engineering” named option MS degree program to the list of degree options in CEE.
- Please add the “Geological Engineering” MS degree program to the list of degree options in CEE.
- If your proposal is approved by campus, CEE requests that the following items be addressed during the planning process:
  - The plan lists a number of employers who are supportive of such a degree program. Provide documentation of this support including a discussion of which types of employees they see taking the new program versus one of our current and relevant engineering programs.
  - Develop a detailed plan for sharing of revenue for those programs expected to provide seats in classes.
Develop a curriculum that emphasizes science with supplemental coursework in engineering and management.
Provide CVs and expected roles of core faculty and staff to ensure that experience is appropriate and that capacity is available.

CEE would also like to make you aware of the MS and PhD degree program in Environmental Chemistry and Technology which is offered by CEE and makes a significant contribution in this space. CEE is happy to contribute to addressing the needs for professionals with the technical, communication, and project management skills actively sought by national and international employers.

Finally, CEE offers to provide one or more members of our faculty to serve on your planning committee as you move forward. Please reach out when future meetings are scheduled. I fully support my faculty colleagues participating in the program planning, course development, executive committee leadership, and teaching associated with the new MS program.

Please contact me at (608) 265-1882 if I can be of further assistance.

Sincerely,

David A. Noyce, Ph.D., P.E., F.ASCE
David Noyce, PhD, PE, F ASCE  
Professor and Chair  
Department of Civil and Environmental Engineering  
University of Wisconsin-Madison  

April 30, 2019  

Dear David,

Thank you for letter of the 12th April and support for the development of a professional Master of Science degree on the topic of environmental remediation within the Department of Soil Science. We appreciate your concerns how the proposed plan differs from existing CEE degree offerings, and in particular the naming of the program. In the past year, we have discussed the naming extensively within the Department and the Division of Continuing Studies and have tried to adequately and succinctly describe the program and to differentiate it from offerings in the Nelson Institute or the College of Engineering.

In meetings with CEE faculty, the naming of “Water Resources Management” and “Water Resources Engineering” was used as an example of a satisfactory distinction between a non-engineering and an engineering degree program. With that in mind, we propose the program name as “MS in Environmental Remediation and Management”

The name reflects the program and is distinctly different from the Geotechnical Engineering named option and the Geological Engineering MS degree program so as to not confuse prospective students or employers. Additionally, the name conveys our curriculum goals and reflects the professional vs. research focus of the program.

We have been mindful of your concerns throughout the description of the proposed program in our Approval to Plan, and will continue to maintain a clear message regarding the students that our program will serve as we progress through the planning process. We trust that you find this name acceptable, and thank you again for your support.

Yours sincerely,

Alfred Hartemink  
Chair, and Professor of Soil Science  
Vilas Distinguished Achievement Professor
Subject: FW: MS degree
Date: Tuesday, May 14, 2019 at 1:41:19 PM Central Daylight Time
From: Alfred Hartemink
To: Edward Boswell, Karen Wasserman
Attachments: David signature.JPG

From: David Noyce
Sent: Tuesday, May 14, 2019 1:39 PM
To: Alfred Hartemink <alfred.hartemink@wisc.edu>
Subject: MS degree

Alfred:

I have talked with my faculty and they support the name change you mentioned. Please proceed.

Thanks!

David

--

David A. Noyce, Ph.D., P.E., F.ASCE
Dr. Arthur F. Hawnn Professor and Chair
Department of Civil and Environmental Engineering
University of Wisconsin - Madison
1415 Engineering Drive
2205 Engineering Hall
Madison, WI 53706
P: (608) 265-1882
www.engr.wisc.edu/cee
www.topslab.wisc.edu
January 22, 2019

Alfred Hartemink, PhD
Professor and Chair
Department of Soil Science
College of Agricultural and Life Sciences
University of Wisconsin-Madison

Dear Dr. Hartemink,

The Department of Life Sciences Communication (LSC) offers our continued support for the development of a professional Master of Science in Environmental Remediation within the Department of Soil Science. We have reviewed the Approval to Plan and are pleased with its collaborative direction. Unless significant changes to the Approval to Plan are made during the campus governance process, our support extends through the full proposal stage.

LSC is eager to contribute to addressing the need for professionals with the technical, communication, and project management skills actively sought by national and international employers. This program will support the broad CALS mission to meet the demand for new educational programming, in collaboration with institutional and industry partners, to provide healthy ecosystems, promote health and wellness, and to stimulate economic development.

LSC fully supports the efforts of our faculty colleagues to participate in the program planning, course development, executive committee leadership and teaching associated with the new Environmental Remediation program. We look forward to offering this exciting new program with you in the future.

Sincerely,

Dominique Brossard, Ph.D.
Professor and Chair
Department of Life Sciences Communication

Department of Life Sciences Communication
201 Hiram Smith Hall       1545 Observatory Drive       Madison, Wisconsin 53706
Phone: 608.263.3073     Fax: 608.265.3042     dbrossard@wisc.edu
January 14, 2019

Alfred Hartemink, PhD
Professor and Chair
Department of Soil Science
College of Agricultural and Life Sciences
University of Wisconsin-Madison

Dear Dr. Hartemink,

The Department of Biological Systems Engineering offers our continued support for the development of a professional Master of Science in Environmental Remediation and Management within the Department of Soil Science. We have reviewed the Approval to Plan and are pleased with its collaborative direction. Unless significant changes to the Approval to Plan are made during the campus governance process, our support extends through the full proposal stage.

The Department of Biological Systems Engineering is eager to contribute to addressing the need for professionals with the technical, communication, and project management skills actively sought by national and international employers. This program will support the broad CALS mission to meet the demand for new educational programming, in collaboration with institutional and industry partners, to provide healthy ecosystems, promote health and wellness, and to stimulate economic development.

In summary, we fully support the efforts of my faculty colleagues to participate in the program planning, course development, executive committee leadership and teaching associated with the new Environmental Remediation program. We look forward to offering this exciting new program with you in the future.

Sincerely,

Troy Runge
Associate Professor and Chair
Biological Systems Engineering
115E Ag Engineering | 460 Henry Mall | Madison, WI 53706
January 15, 2019

Alfred Hartemink, PhD  
Professor and Chair  
Department of Soil Science  
College of Agricultural and Life Sciences  
University of Wisconsin-Madison

Dear Dr. Hartemink,

The Department of Planning and Landscape Architecture in the College of Letters and Sciences offers our continued support for the development of a professional Master of Science in Environmental Remediation within the Department of Soil Science. We have reviewed the Approval to Plan and are pleased with its collaborative direction. Unless significant changes to the Approval to Plan are made during the campus governance process, our support extends through the full proposal stage.

While we offer a MS in Landscape Architecture, with a specialization in Restoration Ecology and Ecological Design, we believe the proposed MS in Environmental Remediation will complement more than compete with our Restoration program. We will be happy to explore potential collaborations to provide restoration expertise and courses as desired.

We support your efforts addressing the need for professionals with the technical, communication, and project management skills actively sought by national and international employers. The Environmental Remediation program will support the broad CALS mission to meet the demand for new educational programming, in collaboration with institutional and industry partners, to provide healthy ecosystems, promote health and wellness, and to stimulate economic development.

I fully support the efforts of my faculty colleagues to participate in the program planning, course development, executive committee leadership and teaching associated with the new Environmental Remediation program. We look forward to offering this exciting new program with you in the future.

Sincerely,

Ken Genskow, Department Chair
Date:     August 5, 2019

To:   John Karl Scholz, Provost
       William Karpus, Dean, Graduate School

From:   Kathryn A. VandenBosch, Dean, CALS

Subject:  Notice of Intent to Plan: MS in Environmental Remediation & Management

On April 14, 2019 the CALS Academic Planning Council met and unanimously approved a notice of intent to plan a profession MS in Environmental Remediation & Management. On Feb 20, 2019, a campus 131-budget review meeting, which included academic and financial representatives from the provost’s office, the vice chancellor’s office, the graduate school, CALS, and the department of Soil Science, also approved the proposed budget for this program. I understand this proposal requires action by GFEC and UAPC and ask that it be placed on their agendas at the earliest possible time.

The planning for this new program was driven by the need for trained individuals to oversee the environmental assessment, remediation, and redevelopment of abandoned commercial and industrial sites with unknown levels of soil and water contamination. The program will provide in-depth physical science knowledge related to soil and groundwater and, through coursework in project management, provide a foundation for rising to project management and business development level positions within the field of environmental remediation. We are enthusiastic for the opportunity to be leaders in offering this professional training to our students.

The notice of intent to plan proposal is attached along with supporting documentation. Please feel free to contact me or Associate Dean Wassarman if you have any questions.

Cc:   Alfred Hartemink, Professor and Chair, Soil Science
       Edward Boswell, Program Director
       Jocelyn Milner, Associate Provost and Director, APIR
       Nicole Wiessinger, Academic Planner, APIR
       Parmesh Ramanathan, Associate Dean, Graduate School
       Karen Wassarman, Associate Dean, CALS
       Sarah Barber, Assistant Dean, CALS
       Mark Rickenbach, Senior Associate Dean, CALS
Instructions

**Step 1 - Use the "Is 131 the Best Option?" tab to determine whether a 131 is best for you.**

**Goal:** Determine whether a program should be a 131 program. 131 programs result in net new enrollment and revenue growth to campus. They must be self-supporting instructional programs that have not been budgeted through UW-Extension and are outside the tuition pool, and they must not compete with, or draw student away from, existing programs. Examples of these non-pooled programs include professional master's and capstone certificate programs.

**How to use:**
Fill out the Yes/No column with the appropriate answer to each question. The result will appear in the Result box below. Read the information to the right. If your result is a 131 program, continue filling out the subsequent tabs of Step 2 - If yes, fill out green boxes on all subsequent tabs.

**Step 2 - If yes, fill out green boxes on all subsequent tabs.**

**131 Program Summary**
This tab aggregates the detailed information on subsequent tabs into a summary of total costs per year

**How to use:**
Fill out the green boxes to specify the general details about the program, such as its name, department, year of implementation, credits, price, and enrollment.

**Submodels**

**Curriculum**
This tab breaks down the costs of developing and maintaining course content. The standard cost for course development is $30,000, and course maintenance is frequently 15% of the development cost, although variance is possible.

**How to use:**
Fill in the development cost for each course for each year. The course maintenance column will automatically calculate based on the specified column, which will calculate the fringe benefit expense and total cost. Make sure to click on the + sign to expand each year.

**Salaries & Wages**
This tab breaks down the compensation for each person working for the program and allows people to be classified as either Instructional, Support, or Program Development – Startup.

**How to use:**
Fill in each green column for each person. The base salary should be entered in the column headed by the year, and the appropriate pay basis, months, and effort should be inputted to allow the actual requested salary to appear in the Requested Salary column. Then enter the fringe rate in the specified column, which will calculate the fringe benefit expense and total cost. Make sure to click on the + sign to expand each year.

**Tuition Remission**
This tab calculates costs of tuition remission for Project Assistant and Research Assistant students involved in the program each year.

**How to use:**
Fill in each green box with the number of PA/RA’s the program will require for each year and semester.

**Sub-Agreements**
This tab calculates the cost of sub-agreements with other schools, categorizes the expense as either instructional or support, and identifies the payment type as either fixed rate or per credit.

**How to use:**
Fill in the name of the entity the sub-agreement is with, the type, the payment type, and the amount (ex: $ per credit, or the total fixed amount). The following two columns will calculate based on the payment type and

**Supplies & Services**
This tab allows users to list and describe all purchases, and identify them as instructional, support, or program development.

How to use:

**Investing the Margin**

This tab allows users to describe in detail how the residual money will be spent, categorized by department salaries, new faculty lines, additional TA positions or scholarships, professional development, and other.

How to use:

Fill in the category type, describe the cost, and list the amount for each year.