Date: 24 April 2015

To: Randy Smith
   Vice Provost, Office of Academic Affairs (OAA)

From: Ed McCaul
   Secretary, College Committee on Academic Affairs (CCAA)

Subject: Proposal to revise the Environmental Engineering program curriculum

CCAA has reviewed and approved the attached proposal to revise the curriculum of our Environmental Engineering program on the 23rd of April 2015. I am forwarding the proposal to you so that it can be approved by the Council on Academic Affairs. If you have any questions concerning this proposal please let me know.
To: College Committee on Academic Affairs (CCAA)

Re: Earth Science requirement in Environmental Engineering

Date: March 10, 2015

CCAA Colleagues:

As part of our ongoing efforts to continuously improve our Environmental Engineering program, the faculty in Environmental Engineering met to discuss the options available for our students to meet the ABET program criteria requirement for proficiency in “earth science”. The only option current students have to meet this criteria is to take ENR 3000/3001 - Soil Science & Soil Science Laboratory (see attached suggested curriculum). This course provides detailed content on an aspect of earth science suitable for environmental engineering students interested in problems that involve soil, it may not be suitable for all environmental engineering students. Thus, to provide students an option to meet this requirement we decided to provide them with the option to take EarthSci 1121. Assuming this request is approved environmental engineering students can take either course. Both courses include a laboratory component and both courses are 4 credit hours and thus there is no difference in credit hours and the students will get the benefit of a laboratory experience.

To ensure this change would not impact either program, we solicited concurrence. This correspondence is attached.

If you have any questions regarding this proposed change, please do not hesitate to contact me at lenhart.49@osu.edu or 614/688-8157.

Sincerely,

John Lenhart, PhD
Department of Civil, Environmental and Geodetic Engineering
### Student Information

Name: __________________________ OSU ID: __________________________ OSU Admit Term: ____________

Phone: __________________________ Email (name.number@osu.edu): __________________________

### Suggested Curriculum

This should be used as a **guide** only. Semester offerings are subject to change.

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<th>Year</th>
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<td>____ MATH 1151 (Calculus I) ..................</td>
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<td>____ ENGR 1181 (Fundamentals of Engr 1) ......</td>
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<td>____ ENGR 1100 (Engineering Survey) ..........</td>
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<td>____ MATH 2177 (Math Topics for Engineers) ...</td>
<td>____ MECHENG 2030 (Dynamics) .................</td>
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<td>____ MECHENG 2040 (Statics &amp; Mechanics) ......</td>
<td>____ CSE 1221 (Computer Programming) .........</td>
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<td>____ CHEM 2310 (Survey Organic Chemistry) ...</td>
<td>____ ENVENG 2100 (Analytical Methods) .........</td>
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<td>____ ENVENG 2090 (Prof Aspects) ..............</td>
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<td>____ CIVILEN 2050 (Prob &amp; Data Interpretation)</td>
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<td>____ CIVILEN 3130 (Fluid Mechanics) ..........</td>
<td>____ CIVILEN 3160 (Water Resources Eng) ....</td>
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<td>____ ENVENG 3200 (Fund Env Eng) ..............</td>
<td>____ ENVENG 3210 (Unit Operations) ..........</td>
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<td>____ ENR 3000/3001 (Soil Science) ............</td>
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<td>____ ENVENG 5110 (Biotechnology) .............</td>
<td>____ ENVENG 4090 (Capstone Design) ...........</td>
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<td>____ ENVENG 4200 (Unit Ops Lab) ..............</td>
<td>____ ENVENG 3080 (Econ Eval &amp; Optimization)</td>
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<td>____ CHBE 5771 (Air Pollution) ..............</td>
<td>____ ENVENG 5170 (Pollution Prev) ............</td>
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Total Hours to complete the degree program = 130

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*Please note that students who need preparatory work before beginning Math 1151 will need additional time to complete this curriculum. The outlined curriculum is not a prescribed plan and is intended to be used as a guide to assist students in progressing through the curriculum with respect to prerequisite courses. Course offerings are subject to change. Please check the online course bulletin and master schedule for prerequisite requirements & course availability.*

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### Acceptance Criteria

Admission to the Environmental Engineering program requires a formal application, minimum cumulative point-hour ratio (CPHR) of 2.0, as well as minimum eligibility point-hour ratio (EPHR) of 2.0 (EPHR of 2.2 required effective Summer 2014) for consideration. EPHR is calculated from the courses required for admission to the major, excluding Engineering 1100 and English 1110. Students must have completed Engineering 1100, 1181 and 1182, Math 1151 and 1172, Physics 1250, Chemistry 1210 and 1220, Mechanical Engineering 2040, and English 1110, or equivalents. Please refer to the Department website for major admission details and deadlines.

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Revised 7/2/2013
Technical and Other electives
Students are required to complete 12 hours of technical electives, chosen in consultation with a faculty advisor upon admission to the major. Students must complete one course from Area 1, 6 hours of coursework from Area 2, and the remaining coursework may come from any Area as outlined on the Technical Elective Guide.

Area 1 Technical Elective (Additional Chemistry-based Course) ________________________________________
Area 2 Technical Elective (Civil & Environmental Engineering) ________________________________________
Area 2 Technical Elective (Civil & Environmental Engineering) ________________________________________
Additional Technical Elective .................................................................

General Education Requirement

**Writing and Communication**
- English 1110.xx 3 hr
- Second Writing Course 3 hr

**Social Science**
*Only one course per Social Science group may count.*
- Economics 2001.xx 3 hr
  3 hr

**Literature**
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3 hr

**Visual and Performing Arts**
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3 hr

**Historical Study**
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3 hr

**Second Historical Study or Cultures and Ideas**
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3 hr

**Social Diversity in the United States**
*Course may overlap with another general education category.*
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0 / 3 hr

**Ethics**
*Ethics courses listed below may overlap with their corresponding general education category.*
- Social Science, Individual & Groups sub-category: Economics 3048.
- Social Science, any sub-category: Sociology 3302, Sociology 3464.
- Cultures & Ideas: Comparative Studies 2341, Philosophy 1332.
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0 / 3 hr

**Foreign Language**
*Pre-approved substitutions*
- A. Completion by enrollment in a foreign language sequence through 1103, or enrollment in a foreign language course with a prerequisite of 1103, can be substituted for one general education course in Cultures and Ideas.
- B. Completion of a foreign language minor can be substituted for two general education courses, one in Social Science groups A or B, and one in Cultures and Ideas.

**University Capstone (Cross-Disciplinary Seminar)**
*Pre-approved substitutions*
Completion of a Social Science 3597 or 4597 can be substituted for a Social Science general education course in any group. Completion of an Arts & Humanities 3597 or 4597 can be substituted for a Visual/Performing Arts general education course.

A list of approved general education courses can be found at engineering.osu.edu/major.

Revised 7/2/2013
Correspondence with Earth Sciences:

Hi John,

Looking at our enrollment history in 1121 over the past several years, we would be able to accommodate 20-40 additional students in the 2 lecture sections/semester we presently offer. We might not be able to accommodate all 40 in a single semester, but we've had that much spare capacity distributed across the 4 sections in Autumn and Spring Semesters. In addition, we usually offer 1121 during the summer, and have some spare capacity there.

Another advantage of providing 1121 as an option to your students is that ~all public universities and community colleges in Ohio offer an equivalent of 1121 -- again, part of the Ohio Transfer Assurance Guidelines and Ohio Transfer Module. This means that your students could take the 1121 equivalent elsewhere -- during the summer, or before transferring to OSU -- and transfer it to OSU.

Hope this information is helpful. I'm stuck in Chicago right now, but will respond to anything else as time allows.
Thanks for considering 1121 as an alternative for your Env Eng students. I don't see a reason why it wouldn't work for them.
Best
Larry

On 2/2/15, 10:02 AM, Lenhart, John wrote:

Thanks Larry. That really helps.

On a related topic, we are looking to give the Environmental Engineering students the option to take Earth Sci 1121 to meet their mandated “earth science” requirement. At this time we only allow them to take Soil Science 3000. Before doing so, I need to make sure that this would not be an impact to Earth Sciences in terms of staffing or scheduling. At this time we are admitting approximately 40 new Environmental Engineering students per year and I anticipate given the option at least half of them would choose to take the Earth Science course. Would the addition of 20 or more of our students prove to be an issue?

Thanks again,

John
Correspondence with the School of Environment and Natural Resources:

Hello John,

Our Academic Affairs Committee voted to give concurrence on the request to add EarthSci 1121 as an option along with ENR 3000 for the "earth science" requirement for Environmental Engineering students. The soils faculty on our committee commented that they enjoy having engineering students in the course, and they expect that many of them will still choose soils, so although it impacts our numbers to some degree we have no major concerns. We thought it was important to note that the two courses are quite different with the soils course here being a relatively upper level course that addresses a relevant area of earth science in great detail, while the Earth Science course is really quite a big picture course that is a broad introduction to geology. They are not equivalent options, and it may be worth it from an advising standpoint to think about which is more appropriate for individual students given their particular career interests and skill level. If there is anything we can do to further clarify what the soils course offers to your students, please let us know.

Best,

Robyn

Robyn

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THE OHIO STATE UNIVERSITY

Robyn S. Wilson, PhD
Associate Professor of Risk Analysis and Decision Science
College of Food, Agricultural and Environmental Sciences School of Environment and Natural Resources

College of Arts and Sciences School of Communication (by courtesy)
316D Kottman Hall, 2021 Coffey Road, Columbus, OH 43210
614-247-6169 Office / 614-570-7699 Mobile / 614-292-7432 Fax
wilson.1376@osu.edu senr.osu.edu

Click here to go to Robyn's webpage
Click here to go to the Environmental and Social Sustainability Lab webpage
Click here to go to the Human Dimensions of the Environment Research Group webpage

On Feb 25, 2015, at 10:16 AM, Robyn Wilson <wilson.1376@osu.edu> wrote:
Thanks John, I will get back with you after our AAC meeting today.

<osu-emailsig.png>

Robyn S. Wilson, PhD
Associate Professor of Risk Analysis and Decision Science
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On Feb 23, 2015, at 5:55 PM, "Lenhart, John" <lenhart.49@osu.edu>
wrote:

Hello Robyn,

The course we would add is the one that our Civil Engineers can take as part of their “additional science” requirement mandated by our accrediting agency (EarthSci 1121). A similar requirement is mandated for Environmental Engineers, but it specifies “earth science”. Thus, we look to give our environmental engineering students the option to take ENR 3000 & lab or EarthSci 1121. We currently enroll about 40 new environmental engineering students per year so the impact would be the loss of some of these students from ENR 3000. What I need to report on is whether this will prove to be a burden in terms of staffing or workload.

Thanks,

John

From: Wilson, Robyn
Sent: Monday, February 23, 2015 4:02 PM
To: Slater, Brian
Cc: Lenhart, John
Subject: Re: Environmental engineering students in ENR 3000
Thanks John and Brian, I will put this on our agenda for our meeting this week. Do you have any additional information like what courses in Earth Science might be allowable? I am sure someone will ask, so just seeing if you have other details for me.

Thanks,

Robyn

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**Robyn S. Wilson, PhD**  
Associate Professor of Risk Analysis and Decision Science  
*College of Food, Agricultural and Environmental Sciences* School of Environment and Natural Resources  
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On Feb 23, 2015, at 2:37 PM, "Slater, Brian" <slater.39@osu.edu> wrote:

John

I will forward this to our Academic Affairs Committee for consideration.

Brian

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**Brian K. Slater, PhD**  
Associate Professor and Associate Director  
*College of Food, Agricultural, and Environmental Sciences* School of Environment and Natural Resources  
210P Kottman Hall, 2021 Coffey Road, Columbus, OH 43210  
(614) 292-7315 Office / (614) 581-9102 Mobile / (614) 292-7432 Fax  
slater.39@osu.edu osu.edu
On Feb 23, 2015, at 2:35 PM, Lenhart, John <lenhart.49@osu.edu> wrote:

Hello Brian,

We are looking to make a slight modification to the curriculum for our Environmental Engineering undergraduate students. At this time they only have one option to meet their “earth science” requirement, and that is your class (ENR 3000). We are looking to give them an option to take a class in Earth Sciences to meet this requirement. To do so we need concurrence from both the new program (Earth Sciences) and the existing program (SENR). I don’t know if you are the correct person to contact or not, but since you are the Instructor for the impacted class I thought I would start with you. Let me know if I should be working this through someone else.

Thanks,

John

John J. Lenhart, Ph.D.
Associate Professor
Co-Director, Ohio Water Resources Center
Department of Civil, Environmental and Geodetic Engineering
The Ohio State University
470 Hitchcock Hall, 2070 Neil Avenue, Columbus, OH 43210

Phone: 614/688-8157
Email: lenhart.49@osu.edu
Web: http://www.ceegs.ohio-state.edu/~lenhart/
and http://wrc.osu.edu/