

<b>Course Number</b>	<b>315</b>
<b>Title</b>	<b>Civil and Environmental Engineering Profession</b>
<b>Section</b>	<b>1</b>
<b>CRN(s)</b>	<b>15287</b>
<b>Credits</b>	<b>1</b>
<b>Prerequisite(s)</b>	<b>Junior standing</b>
<b>Days/Time</b>	<b>Friday 12:45-13:50</b>
<b>Location</b>	<b>EB 102</b>
<b>Final Exam Day/Time</b>	Friday December 12 1245

**Course Website** <http://www.cee.pdx.edu/~scott/ceeprof/>

<b>Instructor</b>	<b>Scott A. Wells</b>
<b>Office</b>	<b>EB 202K</b>
<b>Phone</b>	<b>5-4276</b>
<b>E-mail</b>	<a href="mailto:scott@cecs.pdx.edu">scott@cecs.pdx.edu</a>
<b>Office Hours</b>	12:30-2:00 Thursday, see Sara in CEE office for an appointment
<b>Mailbox Location</b>	CEE Office, EB 200 Suite

**Required Text or Other Materials:**  
None

**Catalog Course Description:**

Introduction to Civil and Environmental Engineering (CEE) practice in structural, environmental, geotechnical, and transportation engineering. Overview of education, training, research, and employment opportunities for each area of CEE. Engineering registration and ethics.

**Design/Professional:**

Ethics 50%

**Course Objectives – Students must demonstrate the ability to:**

1. Write an essay ethical responsibilities of engineers within the CEE profession

**Course Requirements:**

**Research Paper**

The research paper will follow the guidelines for this year's Daniel W. Mead Contest. Note that the CEE Department will pick the top paper from the class and submit it to ASCE. Details of the topic are shown below. Format guidelines for ASCE must be strictly followed. These guidelines are at <http://www.pubs.asce.org/authors/index.html>

2009 NATIONAL DANIEL W. MEAD STUDENT CONTEST

<http://content.asce.org/student/mead.html>

Established in 1939 in honor of the 67th President of the American Society of Civil Engineers, the contest provides an opportunity for alert young civil engineers to further their professional development and gain national attention.

**AWARD:** Up to five winners will receive cash prizes (1st place \$1000, 2nd place \$800, 3rd place \$600, 4th place \$400, 5th place \$200).

**TOPIC: "Sustainability and Civil Engineering "**

The following can be used to stimulate, but should in no way limit, the discussion:

Canon 1 of the ASCE Code of Ethics states: "Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties." The code goes on in subparagraph f of Canon 1: "Engineers should be committed to improving the environment by adherence to the principles of sustainable development so as to enhance the quality of life of the general public." The Code of Ethics presents the following definition: "Sustainable Development is the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste

management while conserving and protecting environmental quality and the natural resource base essential for future development.” There are other published definitions of terms related to sustainability, and authors should be clear as to what definition they are basing their discussion on. This definition and its inclusion in the ASCE Code of Ethics date from 1996.

Some questions or issues to consider are:

1. Is the education you are being provided sufficient for you to work as a civil engineer – are you being taught the “principles of sustainable development” as part of your academic major? If not, is this ethical?
2. What other skills, knowledge base, and/or appreciation for other disciplines does a civil engineer need to fully understand sustainability? Can you practice ethically without these skills?
3. Under what circumstances, if any, is practice in violation of the principles of sustainable development ethical?
4. When, if ever, is practice in accordance with the principles of sustainability unethical?
5. Are the development projects, in the US and/or beyond our borders, being undertaken by US governmental agencies conducted in an ethical fashion given the principles of sustainability?
6. Is the American life style ethical given the principles of sustainability? As a civil engineer should you strive to lead a more sustainable life style given the published code of conduct of your profession? At what point could the American life style become ethical and sustainable? Is this attainable?

**RULES:** Papers are not to exceed 2,000 words in length, must be written by only one person, and should not have appeared in any publications other than in school or chapter publications. Reference citations of the papers should conform to the official ASCE Authors' Guide to Journals and Practice Periodicals, which can be found on the ASCE Publications web site

<http://www.pubs.asce.org/authors/index.html>. **Entries for the contest shall be limited to one paper from each Student Chapter and must be submitted through the Faculty Advisor.**

Authors must be undergraduate students and both ASCE Student Chapter members and ASCE Society student members in good standing at the time of submission to be considered. Entries should include a cover letter from the Faculty Advisor of the Chapter, stating the name, ASCE ID number, mailing address, phone, and e-mail of the paper's author. Send entries to: ASCE Student Services, Student Mead Paper Contest, 1801 Alexander Bell Drive, Reston, VA 20191-4400. **Entries must be received by March 1, 2009.**

**SELECTION:** Selection will be made by the ASCE National Committee on Student Activities and winners will be announced in May 2009. If insufficient qualified essays are received, fewer than five awards may be presented.

Questions should be directed to Student Services at [student@asce.org](mailto:student@asce.org).

2006 NATIONAL DANIEL W. MEAD STUDENT CONTEST WINNERS

The following individuals were selected by the Committee on Student Activities as winners of the National Daniel W. Mead Student Contest.

**National Winners are:**

**1st place: Benjamin Wiley, Portland State University**

2nd place: Alison Trachet, University of Florida

3rd place: Kyle Frazier, Mississippi State University

4th place: Aaron Quick, University of Alabama

5th place: Zachary Trujillo, New Mexico State University

Note Example reference format from ASCE:

From the ASCE web page (<http://www.pubs.asce.org/authors/index.html#ref>):

“To cite sources in the text, use the author-date method; list the last names of the authors, then the year (see examples in the following paragraph). Prepare an appendix listing all references alphabetically by last name of the first author. For anonymous reports and standards, alphabetize by the issuing institution. ...”

The following table (below) “shows examples of full references for the following types of sources: a software manual (*ABAQUS* 1996), a discussion (Agarwal and Mishra 2000), a standard (ASTM 1997), a two-part paper (Bazant and Novak 2000a,b), a book in a foreign language (Duvant and Lions 1972), a paper in a proceedings (Eshenaur et al. 1991), an anonymous newspaper article  
*CEE Department Syllabus*

(AFactory@ 2000), an anonymous report (FHWA 1995), an untitled item in the *Federal Register* (Federal 1968), a university report (Gupta and Krawinkler 1999), a doctoral thesis (Hordijk 1991), a building code (ICBO 1997), a translated book (Melan 1913), a paper in a foreign journal (Merifield et al. 1999), a World Wide Web site (AProduct@ 1999), an anonymous book (*Soil* 1995), a book with editors (Zadeh 1981), and a paper in an ASCE journal (Zhang 2000).”

**Journals:** King, S., and Delatte, N. J. (2004). “Collapse of 2000 Commonwealth Avenue: Punching shear case study.” *J. Perf. Constr. Facil.*, 18(1), 54-61.

**Conference Proceedings and Symposia:** Fwa, T. F., Liu, S. B., Teng, K. J. (2004). “Airport pavement condition rating and maintenance-needs assessment using fuzzy logic.” *Proc., Airport Pavements: Challenges and New Technologies*, ASCE, Reston, Va., 29-38.

**Books and Reports:** Feld, J., and Carper, K. (1997). *Construction failure*, 2<sup>nd</sup> Ed., Wiley, New York.

**Unpublished Material:** Unpublished material is not included in the references. It may be cited in the text in the following forms: (John Smith, personal communication, May 16, 1999) or (Jones et al., unpublished manuscript, 2002). As an exception to the rule, articles that are accepted for publication may be included in the references as follows: Gibson, W. (2003). “Cyberspace: The postmodern frontier.” *J. Comp. in Fiction*, in press.

**Web Pages and On-line Material:** Burka, L. P. (2002). “A hypertext history of multiuser dimensions.” *MUD history*, <<http://www.ccs.neu.edu>> (Dec. 5, 2003).

#### Research Paper Metrics:

- Format (20%) – paper meets format guidelines for margins, line spacing, title page, paragraphs, headings and length
- Spelling, punctuation (10%) – misspelled words (Use spell-check), improper punctuation
- Grammar (10%) - incorrect or poor grammar (Use Word’s Grammar check – but do not always believe it. Have a friend read it for word flow. Read the material out loud.)
- Content (50%) – well-organized material, clear, concise writing style
- References (10%) – used 2 references from a Journal or other acceptable source, proper reference format

*Note: Plagiarism will result in a grade of 0 for the research paper.*

#### Typical problems from prior years:

1. No coherent logical development – write an outline
2. Use of contractions – do not use contractions in technical or formal writing
3. Use of indefinite “it” to start sentences:  
“It is important for engineers to remember...” == “Engineers need to remember ...”
4. “In my opinion it should not matter how a person...” == “How a person... should not matter”
5. “However I know it gives me the right answer every time I use it.” == “The computer program gives the right answer every time it is used.”
6. Not following format guidelines, spelling, punctuation and grammar rules – read your paper out loud to a relative or fellow classmate. If English is not your native language, have a native reader listen to you. Consider a technical writing class if you are having difficulties. PSU has many resources to help you improve your writing:  
<http://www.writingprogram.pdx.edu/Where3.htm>
7. “It is important to consider the fact that professional engineers are daily called upon to use their judgment...” == “Professional engineers are daily called upon to use their judgment...”
8. Not following ASCE reference guidelines – very common!

#### Course Grading

Assignment	Points Assigned or % of Total Grade
Attendance	30
Research paper outline	10
Research paper	60

**Incompletes:** A grade of “I” is granted by the instructor *only* with prior approval and consent. Criteria are outlined in the PSU Bulletin. **Program requirements:** {for UG courses} The CEE Department requires that junior and senior engineering courses must be completed with a minimum grade of C-, and a student’s cumulative PSU GPA must be 2.33 or higher to graduate from the BSCE program.

## Course Schedule

No	Date	Topic	Speaker(s)
1	10/3	Welcome to the CEE Department, introductions, Computer support at CECS	Scott Wells, KC and Sara
2	10/10	Structural Engineering Environmental Engineering ASCE Student Chapter	Peter Dusicka Gwynn Johnson ASCE student officers
3	10/17	Environmental Engineering Environmental/Water Resources Engineering Transportation Engineering	Bill Fish Scott Wells Chris Monsere
4	10/24	Civil Engineering Profession, CECOP program, Engineering in the public sector	Steve Townsen, City of Portland
5	10/3	Environmental Engineering Transportation Engineering Honesty/Ethics/Advising	Jim Pankow Rob Bertini Scott Wells
6	11/7	Geotechnical Engineering Environmental Engineering - Oceanography Structural Engineering	Trevor Smith David Jay Mike Gorji
7	11/14	Structural Engineering Transportation Engineering Term paper – outline/technical writing	Franz Rad Miguel Figliozi Scott Wells
8	11/21	Water Resources Engineering Ethics in Engineering <b>Outline due</b>	Hamid Moradkhani Scott Wells
9	11/28	<b>Holiday</b>	
10	12/5	FE/PE Examination registration	Chik Erzurumlu
11	12/12	<b>"FINAL EXAM"</b>	Project paper due in CEE office

## CEE Faculty

Name	Degree and University	Specialty	Phone #	Office
Robert Bertini	Ph.D., University of California, Berkeley	Transportation Engineering – Intelligent Transportation Systems	5-4249	301-A
Rob Doneker	Ph. D. Cornell University	Environmental Engineering – Near Field Mixing Modeling	5-8730	202-B
Peter Dusicka*	Ph.D. University of Nevada, Reno	Structural Engineering – structural and seismic testing/research	5-9558	301-C
Chik Erzurumlu	Ph.D., University of Texas, Austin	Structural Engineering – stability of structures	5-4636	500
Miguel Figliozi	Ph.D., University of Maryland	Transportation Engineering		301
Bill Fish	Ph.D., Massachusetts Institute of Technology	Environmental Engineering – environmental cleanup strategies	5-4278	202-E
Mike Gorji	Ph.D., University of California, Los Angeles	Structural Engineering – structural mechanics	5-4280	202-G
Gwynn Johnson	Ph.D., University of Arizona, Tucson	Environmental Engineering – contaminant transport	5-8710	202-F
David Jay	Ph.D. University of Washington	Environmental Engineering and Science - Physical Oceanography	5-4247	202-C
Roy Koch	Ph.D., Colorado State University	Environmental Engineering – hydrologic and water modeling		Cramer Hall
Kent Lall	Ph.D., University of Birmingham (England)	Transportation Engineering – procedures to evaluate two-way stop intersections	5-4245	202-H
Hamid Moradkhani	Ph.D. Univ. of CA, Irvine	Water Resources Engineering – hydrologic modeling/forecasting	5-2436	202-J
Chris Monsere**	Ph.D., Iowa State University	Transportation Engineering	5-9746	301-B
Wendelin Mueller	Ph.D., University of Missouri, Rolla	Structural Engineering - Structural/Seismic Analysis and Testing	5-4299	301-D
Jim Pankow	Ph.D., Cal. Instit. Of Tech.	Environmental Science and Engineering, aquatic chemistry		202-D
Franz Rad	Ph.D., University of Texas, Austin	Structural Engineering – earthquake damage and loss estimation models	5-4205	202-M

Name	Degree and University	Specialty	Phone #	Office
Trevor Smith	Ph.D., Texas A&M University	Geotechnical Engineering – in situ testing, design and analysis	5-3225	202-N
Scott Wells	Ph.D., Cornell University	Environmental Engineering – water quality and hydrodynamic modeling	5-4276	202-K

\*ASCE Advisor \*\*ITS Advisor

#### CEE Staff

Name	Title	Phone #	Office
KC Hall [kchall@cecs.pdx.edu]	Office Staff	5-4244	202-A
Sara Ann Vandehey [sav@cecs.pdx.edu]	Office Staff	5-4282	Suite 200
Tom Bennett	Technician	5-4279	

#### Computer and E-mail Accounts

All engineering students should activate their engineering computer account (go to the FAB 60-06) which will allow them to use engineering computer labs and e-mail. You should activate it *before* the day you need it. If you encounter problems with this account, see the lab attendant, or e-mail: [support@cecs.pdx.edu](mailto:support@cecs.pdx.edu). Please note: the CEE Department regularly sends course announcements, job information, etc. to students' CECS accounts, so if you do not check it regularly, we recommend forwarding your CECS e-mail to whatever e-mail address you use.

#### Ethics and Professionalism

As future professional engineers you should plan to take the FE Exam (see the Oregon State Board of Examiners for Engineering and Land Surveying at [www.osbeels.org](http://www.osbeels.org)), and you should be familiar with the ASCE Code of Ethics ([www.asce.org/inside/codeofethics.cfm](http://www.asce.org/inside/codeofethics.cfm)), which includes the following:

***Engineers shall act in such a manner as to uphold and enhance the honor, integrity and dignity of the engineering profession.***

The PSU Student Conduct Code prohibits all forms of academic cheating, fraud, and dishonesty. Further details can be found in the PSU Bulletin. Allegations of academic dishonesty may be addressed by the instructor, and/or may be referred to the Office of Student Affairs for action. Acts of academic dishonesty may result in a failing grade on the exam or assignment for which the dishonesty occurred, disciplinary probation, suspension or dismissal from the University. The students and the instructor will work together to establish optimal conditions for honorable academic work. Questions about academic honesty may be directed to the Office of Student Affairs (<http://www.ess.pdx.edu/osa/>).

#### Student Groups and Professional Organizations

Participation in student and professional groups can be a valuable part of your education experience. Membership gives students opportunities to get to know fellow students better, meet and network with professionals, collaborate in solving real engineering problems, learn about internship or job possibilities, socialize and have fun. Your fellow students can be a great source of help and guidance in your academic endeavors. Consider becoming active with a student organization, such as the following:

- American Society of Civil Engineers Student Group (ASCE): <http://www.asce.pdx.edu>
- Institute of Transportation Engineers Student Chapter (ITE): <http://www.its.pdx.edu/ite/>

Most professional organizations have monthly meetings and encourage student participation by providing discounts for lunch and dinner meetings. These meetings provide opportunities to network with potential future employers, learn about scholarships, and increasing your technical knowledge. Take a look at these organizations as a starting point:

- American Society of Civil Engineers (ASCE) Oregon Section: [www.asceor.org](http://www.asceor.org)
- Institute of Transportation Engineers (ITE) Oregon Section: [www.oregonite.org](http://www.oregonite.org)
- Society of Women Engineers (SWE) Columbia River Section - <http://www.swe-columbia-river.org>
- Structural Engineers Association of Oregon (SEAO): [www.seao.org](http://www.seao.org)

#### Resources

As a PSU student, you have numerous resources at your disposal. Please take advantage of them while you are here. A small sample is listed below:

- CE Website (includes program info, job listings, etc.): <http://www.cee.pdx.edu/>

- Career Center: <http://www.career.pdx.edu/>
- Center for Student Health & Counseling: <http://www.shac.pdx.edu/>
- The Writing Center: <http://www.writingcenter.pdx.edu/>
- PSU Disability Resource Center: 435 Smith Memorial Union

Note: The PSU Disability Resource Center is available to help students with academic accommodations. If you are a student who has need for test-taking, note-taking or other assistance, please visit the DRC and notify the instructor at the beginning of the term.

### **Introduction to Library and Literature Research**

With the advent of the Internet it is very tempting to think that all necessary resources for a term project will be available in full text after typing in a few words at Google.com. This is not the case. You will often need to go to the library, use real library search tools and access real books and articles contained in refereed/archival journals.

Be sure to make use of the Vikat library catalog. Go to the PSU library home page at <http://www.lib.pdx.edu/>. Also available on the library home page are Full Text Electronic Journals: <http://www.lib.pdx.edu/~bvws/bytitle.html>, and a list of on-line Databases: <http://www.lib.pdx.edu/resources/databases/databases.html>. Try EI Compendex (<http://www.ei.org/ev2/ev2.home>) and Lexis-Nexis. Note that access to these databases is free for PSU students, but you must be using a computer on campus or via a dial-in service. See <http://www.lib.pdx.edu/services/distance/proxyserver.html> for instructions on how to gain off-campus access using a proxy server.

### **Campus Safety**

The University considers student safety paramount. The Campus Public Safety Office is open 24 hours a day to assist with personal safety, crime prevention and security escort services. Call 503-725-4407 for more information. For Campus emergencies call 503-725-4404.