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Teaching Standards in Environmental Site Assessments

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Practical Ideas from Professors: Standards Education in Your Courses

Teaching Standards in Environmental Site Assessments



About the Department of Earth and Atmospheric Sciences at CCNY

Since 2010, the Department of Earth and Atmospheric Sciences of City College of New York (CCNY) has successfully implemented a two-semester sequence course entitled Phase I and Phase II Environmental Site Assessments. From the very beginning of this effort, a total of ten standards per semester were used as mandatory reference material. Based on this experience, several practical ideas emerge as successful means of integrating standards into an academic curriculum.

Using Standards in the Earth and Atmospheric Sciences Program

The first practical idea for integrating standards into an academic curriculum is to create a detailed inventory of the available opportunities within your institution for students to grow professionally. In the current academic environment, there is a divide between research-oriented courses and profession-oriented courses. Graduate courses tend to be more research-oriented, although there is a growing trend of emerging professional graduate degree programs that focus squarely on preparing students to join the workforce. Another divide exists between semester-long university courses and continuing professional education courses that may run for one or several days. Based on the CCNY experience with integrating standards into our courses, the aforementioned divides can be bridged or at least mitigated through careful integration of select standards into academic curriculum. This is where a detailed inventory of available programs within your institution becomes essential. It will guide the selection of appropriate standards and align their classroom use to your ultimate goals. A detailed inventory will help you to avoid overlaps with other existing courses. It will also make your case stronger in explaining to your colleagues the relevance of your course to the future success of your institution as a whole.



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As a member of several professional societies and standards development organizations, Dr. Lampousis is connected to the use and value of technical standards. He served as a member of the American Society of Testing and Materials (ASTM International) subcommittee and task group responsible for developing the ASTM Standard E1527-13, Practice for Environmental Site Assessments. Related classes that he developed for the Department of EAS at CCNY were noted by ASTM and the US Environmental Protection Agency, resulting in close collaboration with these organizations in the areas of curriculum development and internship opportunities (see article in the January/February 2012 issue of *ASTM's Standardization News*).

For more Practical Ideas for Professors, visit

www.ieee.org/education_careers/education/standards/educators_resource_library.html

For information on IEEE Standards, visit standards.ieee.org

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Using Standards in the Department of Earth and Atmospheric Sciences

The second practical idea is to engage members of standards development organizations in the development of your curriculum. In the case of CCNY, multiple members of ASTM International were invited to and engaged in the curriculum development from the very beginning. This was realized in the form of invited guest speakers from ASTM and participation in common events. Both administrators and members of technical committees from ASTM were directly involved in this effort. The interaction between CCNY and ASTM in this case produced wonderful results in terms of exposure of the new academic program and visibility across many different types of stakeholders. The CCNY experience so far has been a textbook example of win-win collaboration. ASTM gained access through CCNY to a new generation of students who may potentially become standards enthusiasts. In turn, ASTM created opportunities for CCNY students to interface with a long list of diverse types of stakeholders, and in some cases potential employers.

The third practical idea is to expand your outreach outside your institution, while using as a vehicle your standards-based curriculum. In the CCNY example, students were able to connect to university alumni serving in government agencies. The highlight of this endeavor has been the awarding of summer volunteer student internships through the CCNY alumni association within Region 2 of the EPA. Presently in its third year, this program benefited several students who were assigned, among other responsibilities, various standards-based tasks as part of their internships. For instance, they were asked to review the accuracy and completeness of Phase I Environmental Site Assessments reports conducted within the New York City five boroughs using ASTM E1527. This is the flagship standard used in the first installment of the two-semester course sequence at CCNY. In this case, the integration of this standard in the curriculum allowed students to perform well in their internships and also to be informed of mainstream industry practices even before graduation.

Finally, the fourth practical idea is to continue fine-tuning the integration of standards in your curriculum to account not only for the anticipated amendments of existing standards but also for your own institution's changing goals. The job market in the current economic environment is no better than a moving target. Careful and continuous re-evaluation of your standards selection is necessary in order to align your curriculum as much as possible to ever-changing job market conditions. This is yet another strong point of implementing a standards-based curriculum. It is much faster to change it compared to a curriculum that depends heavily on a single textbook.

Overall, the CCNY example proves that the above-mentioned sequence of steps, namely (a) creating an inventory of available programs and positioning your program within your institution, (b) engaging with standards societies, (c) expanding your outreach outside the confines of your institution, and (d) continuously re-evaluating your standards selection for classroom use, can be a very successful model for growing your program. The ultimate recognition and gratification is no other than the testimonials of graduating students who find a job soon after graduation. Eric Persaud wrote in a heartfelt note: "I would like to thank you for your class in general. I gained a lot from your course, and not just the 40-hour HAZWOPER. I learned valuable material that prepared me to work in the industry upon graduation, more so than any other class. Because of your courses I was able to get a career as a geologist. I don't believe it would have happened so soon after graduation if not for the resources I gained from your courses." Alessandra Coco wrote: "I am happy to announce that I have been hired as an industrial hygienist. ... I strongly feel that your classes have really helped me get the job and that I can finally use the things I have learned. I started Friday the 27th, and all day I filled out Excel spreadsheets with air quality data, and wrote reports. It made me feel like I was back in your class. Thank you for everything."

Resources

Lampousis, Angelo. "Teaching Professional Skills," *NextGen, ASTM Standardization News*, May/June 2012.