

**Profile of the
Department of Civil and Environmental Engineering
University of Wisconsin-Platteville
2007 Regents Teaching Excellence Award Recipient**

Department Facts, Activities, and Resources

- *Personnel:*
 - All eleven faculty members hold Ph.Ds and practical engineering experience; Nine are registered Professional Engineers.
 - The department has consistently recruited new faculty from the best graduate programs in the country.
 - During the past five years, faculty have brought in more than \$4 million in grants for teacher education programming, public programming and scholarly research.
 - New professors are funded by the department to attend the Excellence in Civil Engineering Education workshop, the premier national teaching workshop for Civil Engineering faculty.
 - Faculty have won teaching and advising awards at the College, University, and national level.
 - “Collectively the Civil and Environmental Engineering faculty at UW-Platteville are exceptionally cohesive and exhibit an outstanding commitment to the teaching/learning process and the success of their students.” Carol Sue Butts, Provost, UW-Platteville.

- *Students:*
 - The department serves 251 Civil and Environmental Engineering majors in the College of Engineering and Mathematical Sciences.
 - The placement rate of graduates with employers is close to 100% within 6 months of graduation.
 - UWP Civic and Environmental Engineering graduates have achieved the state’s highest scores in the Fundamentals of Engineering exam every year since 1988, even surpassing the national average every year.
 - Working closely with neighboring communities’ infrastructure, the Department continues to provide numerous opportunities for student internships and collaborative projects.
 - The Senior Capstone enables to students to carry out engineering research on a breadth of topics and to present that research at conferences.
 - Students participate in five professional Civil and Environmental engineering organizations, such as the American Society for Civil Engineers (over 100 student members) and Chi Epsilon, the national civil engineering honor society.
 - Undergraduates participate in research programs in areas such as surface water quality and pavement design. Many attend graduate school.

Fostering Excellence in Teaching

- Through each department member’s dedication to instilling technical and communicative excellence in their students and by thus preparing them to excel in their future careers.
- Through hiring seven new faculty members over the last ten years who are key contributors to the department and the university community.
- By making student learning their primary mission in this undergraduate-only department.
- By developing a curriculum that is rigorous, invigorating, and requires mastery of a complex set of analytical and scientific skills.
- By enhancing student-faculty-client interactions and increasing student accountability in a capstone course, in which students work in teams on real-life engineering design projects. Past projects range from designing and constructing a playground to designing a railway bridge. At the end of the semester, the teams present their work to the clients, fellow students, and faculty. All faculty advise at least one student organization.
- By devoting themselves to incoming freshmen and underrepresented students.
- By providing a breadth of courses that enable students to meet the engineering and environmental challenges posed by a global economy.
- By creating opportunities for students to be involved in projects with local and state-wide agencies, research groups, and civic service organizations.

Teaching as a Public, Collaborative Activity

- The Department has always valued civic and community/service learning, and both students and faculty engage in collaborative initiatives. It actively supports student organizations such as the 100-member-strong American Society of Civic Engineers, and Engineers Without Borders, as well as engineering honor societies such as Chi Epsilon.
- The faculty's research and consulting activities rank among the most productive at UW-Platteville.
- Selected members of the department play key roles in the creation and development of the women in Engineering program and the creation of a college-wide Minority Education Committee that seeks to recruit, retain and graduate minority students in all engineering, math, and science programs.
- Members of the department help to host an "Exploration Day" for seventh graders from a Milwaukee public School.
- Over one third of the firms who attend UWP Career Fairs are seeking graduates from the Civil and Environmental Engineering program.
- The Department has an outstanding record of attracting external grant funding to launch innovative programs to improve Civil and Environmental Engineering education.
 - One recent NSF grant to modify the Introduction to Engineering course has resulted in publication and creation of a web site to showcase this new course to a national audience.
 - One NSF grant supporting the Bridging Engineering Education program funded the enrollment of pre-service teachers in introductory engineering courses.
 - Grants have also provided project-based learning strategies that allowed School of Education faculty to provide expertise on teaching to the engineering faculty.

Curricula that Challenge and Prepare Students for the Future

- The Department's curriculum is broadly structured to include a wide range of Civil Engineering areas, such as geotechnical-mechanical properties of soil, construction-management and cost estimates, the design of highways, buildings and bridges, the environmental design of water/wastewater treatment, groundwater monitoring, and pollution prevention.
- The Department has increasingly emphasized the importance of engaging students in engineering research and emphasizes student communication skills, particularly in technical communication.
- Recognizing that solving the challenges of the 21st century will require the creativity and talents of a diverse group of civil and environmental engineers, the Department has sought to increase the diversity of their students and to retain those who have been historically underrepresented by emphasizing diversity in its curriculum and staffing.
- Faculty use student-friendly teaching techniques such as discovery learning, which provides students with an open-ended question to solve rather than solving a carefully structured problem. They also design projects based on real need, typically provided by alumni.
- The department emphasizes strong writing skills through its curriculum and that culminates in a capstone experience in which students engage in a rigorous senior research project.

In the Words of the Department's Students

- "I could not have been better prepared for graduate school and to enter the consulting engineering workforce. The department is a well-rounded group of professors who complement each other's teaching abilities."
 - Brent A. Brown, a 1999 graduate in Civil and Environmental Engineering, UW-Platteville.
- "The [...] faculty always stresses the big picture of engineering, how our decisions as designers impact all of society, and that engineering is not just about equations and theorems. Civic involvement, a focus on the total design process (not just number crunching), and emphasis on team building and cooperative learning were always stressed [...] This teaching philosophy produces engineers who are not only grounded in fundamental science, but are capable of immediately contributing to society and the field of engineering."
 - Leon S. Downing, a Civil Engineering graduate of Platteville and PhD Candidate in the Department of Civil Engineering and Geological Sciences at the University of Notre Dame.

- “The Civil Engineering Department at UW-Platteville is the only department where I have seen professors adopt the open-door policy for office hours and [. . .] where the professors make an effort to learn each student by name. It goes without saying there are no teaching assistants [. . .] The community atmosphere in the Department is one I have yet to see elsewhere” [. . .]. I can’t tell you how many nights I used to see professors in their offices helping students until seven or eight at night.”
 - Samantha Hockerman, B.A. in Civil Engineering (2005), and Master’s degree candidate in Civil Engineering at Iowa State University.