

Annual Program Assessment Report  
 For  
 University of Dayton Civil Engineering Program  
 10/19/06

Introduction

This document contains the annual assessment report for the Bachelor of Civil Engineering program at the University of Dayton (UD). Undergraduate students enrolled in the Department of Civil and Environmental Engineering and Engineering Mechanics (CEE) at UD are members of the program. The annual report presented here contains a summary of course assessment for the 2005-2006 academic year.

Analysis of Current Year Data

<b>School of Engineering Student Learning Outcome</b>	<b>Civil Engineering Skill Tested</b>	<b>Evidence of Achievement</b>
The ability to apply knowledge of mathematics, science, and engineering.	numerical errors and error estimation	Students scored an average of 92.2% on homework problems and 81.4% on exam problems relating to this measure.
	numerical solution of nonlinear equations	Students scored an average of 95.4% on homework problems and 81.4% on exam problems related to this measure.
	linear algebra and matrices	Students scored an average of 95.3% on homework problems and 82.3% on exam problems related to this measure.
	curve fitting and regression	Students scored an average of 92.4% on homework problems and 80.4% on exam problems related to this measure.
	probability, statistics, and confidence intervals	Students scored an average of 95.1% on homework problems and 79.0% on exam problems related to this measure.
	interpolation and approximation	Students scored an average of 96.3% on homework problems and 77.7% on exam problems related to this measure.
	programming and problem solving in Visual Basic and MATLAB	Students scored an average of 94.8% on homework problems and 80.5% on exam problems related to this measure.
	water chemistry and	Students scored an average of

	design of treatment units and processes	88.8% on homework problems and 72.9% on exam problems related to this measure.
The ability to design and conduct experiments, as well as to analyze and interpret data.	reports of laboratory experiments, results, analysis, and interpretation	Students scored an average of 84.9% on lab reports.
The ability to design a system, component, or a process to meet desired needs.	analyzing and designing Water Distribution Systems	Students scored 86.8% on homework and 80.7% on exam problems related to this measure.
	generating runoff hydrographs	Students scored 91.4% on homework and 82.4% on exam problems related to this measure.
	analyzing and designing urban drainage systems	Students scored 88.1% on homework and 80.2% on exam problems related to this measure.
	analyzing and designing sanitary sewer systems	Students scored 77.9% on exam problems related to this measure.
	work as part of a team and submit two design reports	100% of students participated on one of seven teams with each team producing two design reports.
	design of a treatment unit or process	Students scored an average of 88.8% on homework problems on design.
	design of a treatment	Students scored an average of 80.2% on exam problems that request design of a treatment unit or process.
	design of one or more components of a complex civil engineering system	100% of the students that passed the course researched, designed, and presented the results of their design of one or more components of a complex civil engineering system.
The ability to function on multi-disciplinary teams.	member of a team involving the following areas: a) Architectural, b) Geotechnical, c) Project management, d) Site/Civil, e) Structural, f) Transportation	100% of students that passed were members of a team involving the following areas: a) Architectural – 2 students, b) Geotechnical – 5 students, c) Project management – 2 students, d) Site/Civil – 5 students, e) Structural – 8

		students, f) Transportation – 5 students, Total number of students – 27.
The ability to identify, formulate, and solve engineering problems.	analyzing and designing Water Distribution Systems	Students scored 86.8% on homework and 80.7% on exam problems related to this measure.
	generating runoff hydrographs	Students scored 91.4% on homework and 82.4% on exam problems related to this measure.
	analyzing and designing urban drainage systems	Students scored 88.1% on homework and 80.2% on exam problems related to this measure.
	analyzing and designing sanitary sewer systems	Students scored 77.9% on exam problems related to this measure.
	work as part of a team and submit design reports	100% of students participated on one of seven teams with each team producing two design reports.
The ability to communicate effectively.	discuss problems related to analyzing and designing Water Distribution Systems	Students scored an average of 86.8% on homework problems related to this measure.
	discuss problems related to generating runoff hydrographs	Students scored an average of 91.4% on homework problems related to this measure.
	discuss problems related to analyzing and designing urban drainage systems	Students scored an average of 88.1% on homework problems related to this measure.
	Bi-weekly progress report presentations where each group member participates in the presentations	Students scored 90.0% on progress report presentations.
	final project presentations that include data collection, evaluation of safety and operational shortcomings of their selected intersections and roadway sections, analyses of data, design of elements and recommendations to improve the transportation system performance	Students scored 90.0% on the final project.

	work as part of a team and submit one final project report	100% of students participated on one of five teams with each team producing one project report.
The knowledge of contemporary issues.	participate in classroom discussions of emerging waste/pollution problems and their treatment options	Majority of students participated participate in classroom discussions of emerging waste/pollution problems and their treatment options.
The ability to use the techniques, skills, and modern engineering tools necessary for engineering practices.	numerical errors and error estimation	Students scored 92.2% on homework problems and 81.4% on exam problems related to this measure.
	numerical solution of nonlinear equations	Students scored 95.4% on homework problems and 81.4% on exam problems related to this measure.
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