

# Course Description

## CIVE 422/822 – Pollution Prevention: Principles and Practices

**Description:** CIVE 422/822 – Pollution Prevention: Principles and Practices. Credit 3. An introduction to pollution prevention and waste minimization methods in a formal classroom setting (two weeks), followed by practical experience obtained by providing technical assistance to selected small businesses and industries (eight weeks). Two additional half-week refresher and report preparation periods are provided during the technical assistance period. Students are guided in the technical assistance phase by UNL faculty, graduate students, cooperative extension educators, and Nebraska Department of Environmental Quality officials.

**Reference:** UNL Pollution Prevention Toolkits, UNL modular P2 educational program, selected portions of U.S. EPA Pollution Prevention manuals, and selected technical articles.

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**Goal:** To provide junior and senior level students with formal training as well as practical experience in the application of pollution prevention and waste minimization techniques.

### Topics discussed in the formal training:

The Waste Management Hierarchy and the benefits and rewards of P2 (1/2 lecture)  
Familiarization with community groups and agencies involved in pollution prevention (P2) (1 lecture)  
Resource management and sustainability (1/2 lecture)  
Legislative and historical development of P2 (1 lecture)  
Regulations (2 lectures)  
Waste estimation (2 lectures)  
Approaches and methods of P2/waste minimization (2 lectures)  
Economics of P2, life cycle analysis, and total cost accounting (2 lectures)  
Additional case studies (1 lecture)  
Specialized training in small groups in preparation for technical assistance assignments (4 lectures)

**Computer Usage:** Use of word processors for preparation of reports, spreadsheets for waste assessment calculations, and the Internet for communications and research.

**Special Projects:** Each student is assigned to prepare a formal report on his or her technical assistance activities. The report will focus on documenting the impact of the student's technical assistance activities.

### Estimated ABET Category Content:

Engineering Science: 1 credit or 33%  
Engineering Design: 2 credits or 67%