Course Assessment Summary

Course Number: CE 479/679	Semester Offered: Fall 2007
Course Name: Advanced Water and Wastewater Treatment	
Instructor: Achintya N. Bezbaruah	

Assessment Procedures and Tools Used: ABET objective A, C, E, G, H, J, and K were set. It was decided to put additional emphasis on A, C, J, and K. However, students were tested for all the objectives. Different tools were tried in the assessment process including: (1) Homework Assignments, (2) In-class Tests/Exams, (3) Take-home Tests/Exams, (4) Unannounced/sudden Quizzes, (5) Project Work, and (6) Final Examination. Homework Assignment included problem solving, journal paper review, and computer modeling. Both in-class and take-home tests involved critical thinking, reading reference books, and browsing the internet. The quizzes were either multiple choice or involved writing one/two word answers. The project work was so planned that it covers as many ABET objectives (C, J, G, and H) as possible. The projects were also evaluated by each students peers and the instructor adjusted the final grade based on that.

Summary of Major Findings:

Strengths: (1) Students did and apparently learnt better working on the take-home tests as they were the hybrids of conventional in-class tests and homework assignments. The answers were complete and problem solving was done more in-depth. (2) Students did a very good job in their projects. Students' creativity and ability to think out-of-the-box found expressions.

Weaknesses: (1) Comparatively less time was devoted on the computer models introduced. (2) Putting water and wastewater together makes the course less in-depth in design.

Closing the Loop: (Based on results of course assessment from the previous round, indicate changes made:

(1) Students from Fall 2006 reported that they were not very clear about the nature and extent of the project work and they were 'totally confused'. They also suggested more interactions were needed with the instructor. In Fall 2007, Project work was started from the very first week of the semester with detailed instructions. Students were asked to pick a topic fulfilling the criteria laid down, prepare an abstract and post it on the Blackboard for others to see and comment, make a mid-term presentation, write a project report, and make a final presentation. The students interacted with the instructor on a regular basis and the interactions were made part of the evaluation. (2) In Fall 2006, the students didn't take the mid-term presentation for the project work very seriously and, so, in Fall 2007, mid-term presentation was converted into a class test. Students' performance increased markedly. (3) In Fall 2006, design component in the course was not extensive. In Fall 2007, students were asked to design a part of or the whole process in three assignments, final examination, and the project work. Computer models (e.g., BioWin) and excel spread sheets were also used for modeling the designed component(s). (3) Textbook used in Fall 2006 was found to be inadequate and, hence, a new textbook was recommended in Fall 2007. The textbook was supplemented with handouts and journal papers.