

# Closing the Feedback Loop: Using Historical Data and Student Feedback to Guide Course Changes

**UB University at Buffalo**  
The State University of New York

Two main degree options:  
Computer Science (BA or BS)  
and Computer Engineering

Public Research  
University  
Undergraduate Student  
Population: 19,000

Computer Science  
Department founded in 1967  
Computer Engineering merged  
with Computer Science to  
form CSE department in 1998

First semester course same for  
both populations (CSE 115)  
Most recent CSE 115  
enrollment: 208  
(Fall), 114 (Spring)

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### Academic Year 2007-2008

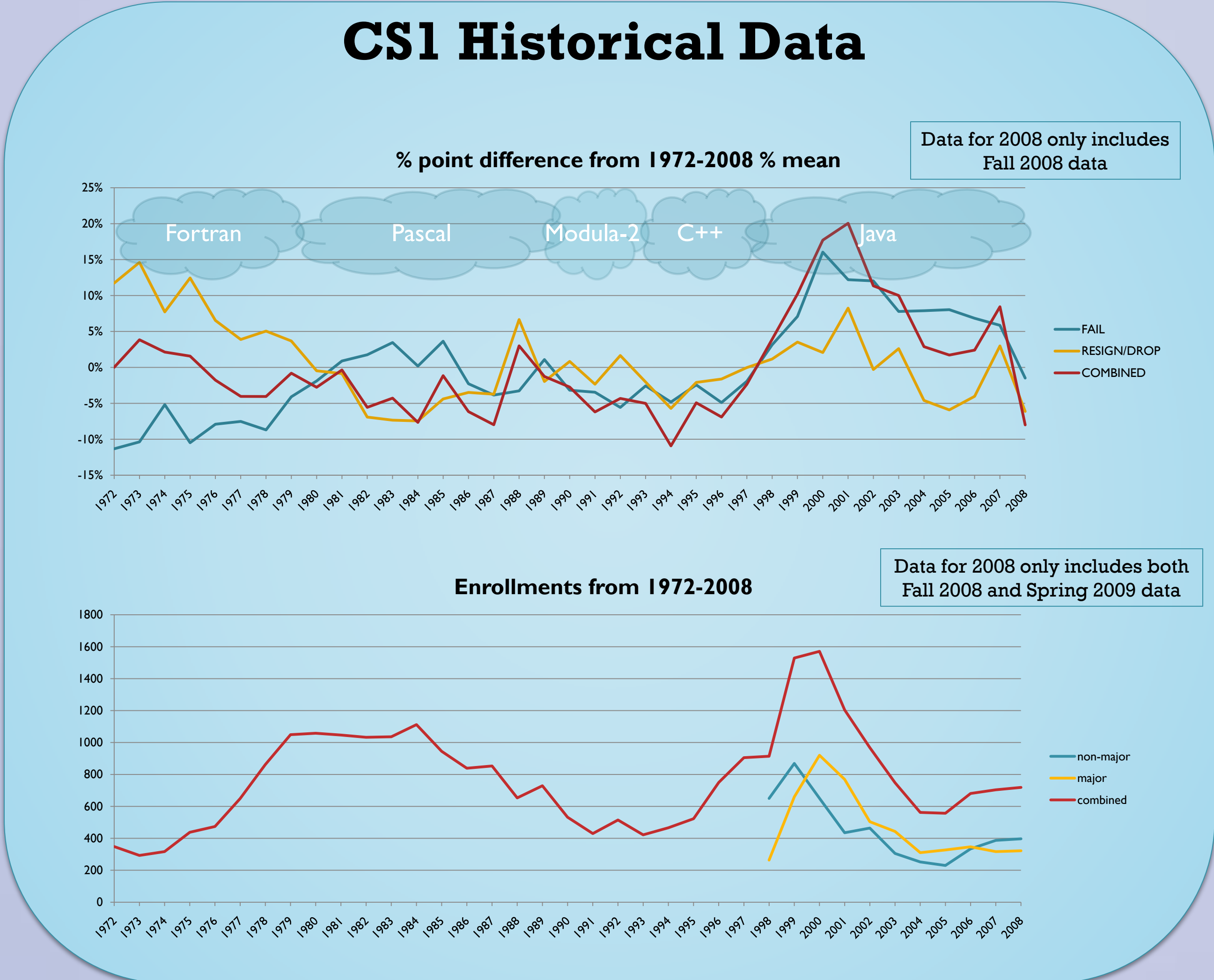
Our CEN program is an ABET accredited program. As with all accredited programs, soliciting feedback from the various constituencies (advisory council, employers, faculty, and students) is an important step in the program's continuous feedback mechanism.

Student focus groups are convened yearly to discuss any issues the students wish to raise about the courses and curriculum within the department.

Many issues were brought up in these discussions, but one issue specifically targeted CS1.

Many students expressed their opinion that the pace of the course was okay in the beginning, but then moved too fast towards the end. They felt that they did not have the opportunity to understand the material well in the course.

This feedback (which had been expressed before at various times) caused an investigation into this issue using various sources of information about our CS1 course.



### Fall 2008 - Changes

3-week capstone project was moved out of CS1 to be inserted at the beginning of CS2. Previously, all material supporting this project would have needed to be completed before the project was assigned. Once removed, those three weeks were used to expand coverage of material earlier on in the course.

**Faculty Impression:** Slowed the pace of the course in a good way. Students did not have the pressure of needing to understand everything to do final project, but also they did not have opportunity to create cumulative piece in the course.

### Fall 2008 - Results

Difference from Historical Average  
Failure Rate: -2%  
Resign/Drop Rate: -7%

Difference from Previous Academic Year  
Failure Rate: -8%  
Resign/Drop Rate: -9%

Student Impression: No formal focus groups were held yet this academic year, but end-of-semester surveys still expressed perceived difficulty with material and expressed opinion that course went too fast.

### Currently – Spring 2009

#### CS1

Feedback between instructors was that some of the introductory material was given too much time, so the introductory material was shortened from three weeks to two and the week distributed elsewhere in the semester. From the faculty perspective, that change is positive (so far).

Student Performance on First Exam:  
Fall 2008 Average: 77.6  
Spring 2009 Average: 78.9

Results of t-test on the two groups showed no statistically significant difference.

#### CS2

The same faculty member taught Spring 2008 and again in Spring 2009. Even though the students had different CS1 courses, the instructor does not perceive a significant difference in the students' preparation or performance so far in the course.

Student Performance on First Exam:  
Spring 2008 Average: 73.2  
Spring 2009 Average: 80.8

Results of t-test on the two groups showed that there was a statistically significant difference between these two groups.