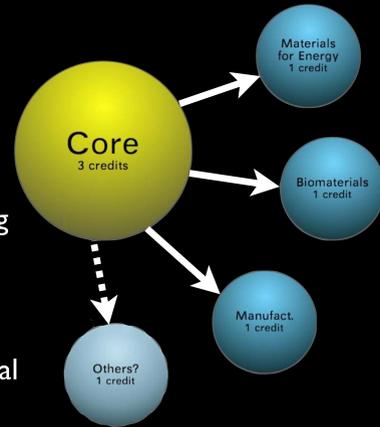


Why Eliminate the Traditional Recitation Section?

- Problem:** How to deliver an MS&E intro course that focuses on Biomaterials, Manufacturing, Materials for Energy, Aerospace Materials, etc., without teaching 3-6 different courses.
- Solution:** Offer one 3 credit "core" set of lectures and, several different 1 credit satellite courses that emphasized a particular flavor of Materials Science and Engineering. All students would take 3 core lectures per week and the satellite course depending on their discipline. Hence, we removed the recitation, removed 25% of the lecture material, and added the satellite lecture.
- Challenge:** What is the impact of removing traditional recitation?
- Opportunity:** Can we rethink the way students learn in different settings and redeploy our GSIs to optimize the temporal structure of a student's learning?
- Our Approach:** Teach the core with a Biomaterials satellite first before adding more satellites and experiment with different methods.



Teaching Where Students Learn: A Fresh Approach to Deploying GSIs

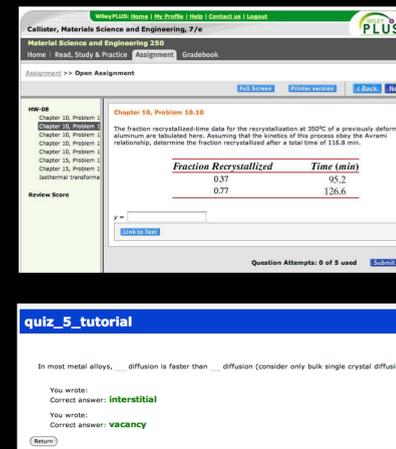
Steve Yalisove, Tershia Pinder-Grover, Crisca Bierwert and Kristen Tebo

Where Do Students Learn?

GSI Office Hours

- 17 hours of office hours spread over each week during Fall 2008
- Excellent one-on-one experience
- Opportunity to get full credit on homework problems missed for students working with their GSI
- Students choose the GSI each time

At Home



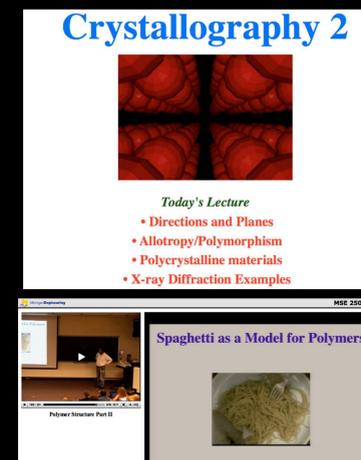
- Online Text
- Online Homework
- Online Tutorials
- Online Screencasts (video lectures with a Tablet PC and voice commentary)
- Recorded Lectures
- One Website, Ctools, as a Dashboard to access every part of the course

Learning Centers



- Multiple instructors provide a variety of perspectives on how to explain course concepts
- Students can find out what others are asking

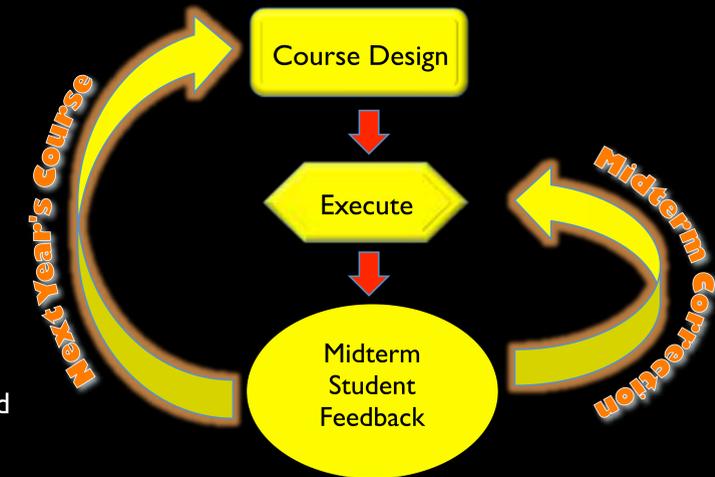
In-Class



- Formal Lecture
- Images, video, animations
- Demonstrations
- Problem solving
- Clicker Problems
- Peer Teaching

Refinement Process

CRLT's Midterm Student Feedback (MSF) permits students to vocalize course strengths, suggestions for improvement, and new ideas to mold a fresh approach



Strategies Learned

- Recitations CAN be replaced with learning centers and more office hours in large lectures
- MSF is excellent strategy for continuous improvement
- Online homework can stimulate GSI office hour attendance

Questions to Pursue

- What is the impact on learning?
- What is the impact on GSIs?

How can GSIs be Redeployed to Enhance the Learning Experience?

- Replace homework grading with extra office hours
- Replace stand and deliver recitation with extra office hours
- Have GSIs attend class and monitor Ctools Chat to answer questions in class
- Have GSIs lead learning centers to provide more one-one-one instruction

IMPORTANT: NEVER reduce the number of GSIs with online homework grading.