

2008-9 SEI End of Year Event

Talks

Carl Wieman, Introduction & Overview of Science Education Initiative progress

Janet Casagrand Int. Phys.

Introducing Challenging Coursework- Asking and reflection on what's working

Amy Palmer, Robert Parson, Tom Pentecost, Chem. & Biochem
Interactive engagement strategies for physical chemistry

Poster session 10:30 -12:00 -- split, see handouts. mf
Details on much of what has been done and learned, opportunity to discuss in depth.

12-1:30 Lunch

What is the SEI all about?

A scientific research based approach to education



students learn more, faculty and students use time more efficiently, more rewarding

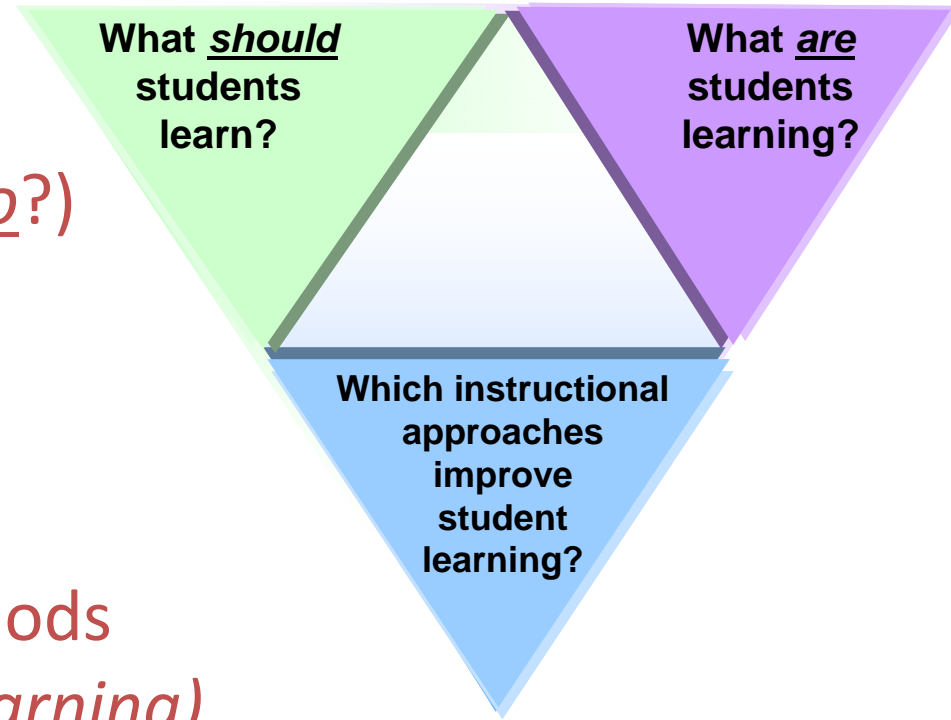
SEI “Holy Trinity” for each course

1st: Learning goals. (what should students be able to do?)

2nd: Good assessment
(validated tests)

3rd: Improved teaching methods
(research based, improve learning)

Materials, assessment tools, homework, notes ...
saved, reused, improved.



Science Education Initiative

Started 3 years ago

Geological Sciences

Integrative Physiology

Chemistry and Biochemistry

MCDB

Physics, added later, smaller program supplemented by NSF \$\$.

All use STF (science teaching fellow) model.

Postdoc level person, expert in both the science and in teaching and learning.

Works with faculty to implement SEI Holy Trinity

*Tiny appetizer-- whet appetite for full course meal
in poster session*

Full update of departmental activities
on SEI website--annual report

What has been accomplished?

Int. Physio, Geo. Sci., MCDB-- Over 80% of faculty have some involvement. About 60% have significantly changed how they teach. ~80% of their undergrad credit hours.

Physics and Chemistry & Biochem-- Substantial impacts, many faculty members.

- Establishing learning goals (*what students can do*)-- better guidance to students & coherence in curriculum
- Improved assessments: learning & student attitudes
- Improved teaching methods-- engagement, interactivity, feedback, higher level thinking
- TA training and faculty development
- Research on learning: content, concepts, and attitudes

Have improved 53 courses, > 10,000 student-courses/year

The screenshot shows a Windows Internet Explorer browser window displaying the SEI Course Materials website. The browser's address bar shows the URL <http://www.sei.ubc.ca/materials/Welcome.do?ticket=IT5jDI50K7bXtWGGE7rmJA@@>. The website header includes the title "SEI Course Materials" and a navigation menu with "Departments/Programs" and "Categories" dropdowns, and a "Search" button. Below the header, the user is logged in as "Hi, Carl Wieman" with a "Log out" button. The main content area features a welcome message: "Welcome to the Science Education Initiative Course Materials System. Materials for undergraduate science courses at the University of British Columbia (UBC) and the University of Colorado (CU) are stored here, as well as notes on the purpose and design of the courses and the use and effectiveness of the materials. The system contains materials developed by departments participating in the Science Education Initiatives at UBC and CU, and is intended to be an open resource for educators. The materials can be accessed by browsing the courses listed under the departments on the left, or by searching for keywords. This system is operational, but is still undergoing modification to add functionality and has not been extensively tested. If you have any suggestions for improvements (for example to increase its usefulness or make it easier to use), please contact Sarah Gilbert, UBC CWSEI Associate Director: sarah.gilbert@ubc.ca. If you have questions about how to use this system, please contact Massoud Kohan, CWSEI IT Projects Leader: massoud.kohan@ubc.ca".

The left sidebar contains a "Help" icon and a "Departments/Programs" section with a list of departments: UBC, Chemistry, Computer Science, Earth & Ocean Sciences, Life Sciences, Mathematics, Physics & Astronomy, and Statistics. Below this is the "University of Colorado" section with a list of departments: Chemistry & Biochemistry, Geological Sciences, Integrative Physiology, Molecular, Cellular, & Developmental Biology, and Physics.

The right sidebar features a "Quick Links" section with a list of links: CWSEI, CU-SEI, PhET, CU, UBC, and Basecamp Forum. Below this is an "Admin" link.


The browser's status bar at the bottom shows "Error on page." and "Internet" with a 100% zoom level. The Windows taskbar at the very bottom displays the Start button, several open applications (Microsoft Office Word, Microsoft PowerPoint, and the SEI Course Materials browser window), a 97% battery level, and the system clock showing 9:02 AM.

- Overview
- Learning
- Goals/Objectives
- Course Calendar
- Student Difficulties
- Lecture Notes
- Concept/Clicker Questions
- Demos & Simulations
- In-Class Activities/Tutorials
- Lab/Field Activities
- Assignments/Homework
- Instructor Reflection
- Course Logistics
- Resources
- Password Protected**
- Exams
- Ungraded Assessment Tools
- Course Data
- Other (solutions, etc.)

EOSC 350 : Environmental, Geotechnical and Exploration Geophysics I

NOTE: Throughout this eos350 archive, references to "GPG" are chapters in the unpublished electronic text by F. Jones and D. Oldenburg. It is not yet part of the archive because it is close to 100 MBytes.

The file (Word Document) is the syllabus for the course outline, including original goals and logistics (grading scheme, etc.).

File:  syllabus.doc

EOSC 350 Topics
3. Potential Fields methods
4. Propagating Waves methods
5. Electrical methods
1. Introduction
6. Review
2. Fundamentals

Extensive set of resources on teaching and learning
for students and instructors at website
cwsei.ubc.ca

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