

Science Instruction in the Secondary Schools--STCH 410

Fall 2003

Class Times/Location: MWF 3:00-3:50 PM ILC 135 3 SH Lecture*
Classroom Internship 1 SH Lab
(Compressed into 7-8 weeks, beginning Sept. 22)

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Text: *Teaching Secondary School Science: Strategies for Developing Scientific Literacy*; Trowbridge, Bybee, Powell; 7th ed. (2000).

Course Homepage: <http://newton.physics.arizona.edu/~novod/stch410.htm>

Classroom Internship

The lab portion of this course, which accounts for 1 SH, encompasses a total of 48 hours. In order to complete that requirement, you will spend 7-8 weeks in a secondary science classroom, working with a mentor science teacher and his/her students. **During those weeks, you will work with one class every day it meets, PLUS an additional hour to work with your mentor teacher. Thus, your time commitment is 6 hours a week for 7-8 weeks.**

If you completed the initial observation assignment, which involved five hours of observation in your mentor teacher's classroom, you will work in that classroom for an additional seven weeks. *If you were unable to complete* that assignment in the mentor's classroom, you will need to complete 8 weeks of internship.

Your internship in secondary classrooms will run from **Monday, September 22 through Friday, November 7 (7-week internship) or Friday, November 14 (8-week internship)**. For those of you placed in Amphi schools, you will need to spend an additional week, since these schools have a fall break in mid-October.

We will hold orientations for mentor teachers on **Saturday, September 13 at 9:00 a.m. and Thursday, September 18 at 5:00 p.m.** You are encouraged to attend the same session as your mentor teacher.

Note: for those of you who are participating in our pilot yearlong student teaching experience, your student-teaching assignment IS your classroom internship.

***We will NOT be meeting on Wednesdays from 4:00-4:50, as indicated in the Schedule of Classes.**

Course Goals

The goals for this course are for you to learn how to:

1. Create and manage a productive learning environment that fosters the development of student understanding.
2. Establish clear communications and positive interactions with learners, colleagues, administrators, and parents.
3. Acknowledge the complex and often unpredictable contexts in which teachers work and manage the complexity in ways that support and sustain student learning.
4. Reflect on classroom teaching to identify evidence of student understanding and make well-grounded decisions to improve practice.

Course Structure

The on-campus portion of the course consists of two major units, as described below:

Classroom Organization Unit [approx. 5 weeks]

Big Idea for Unit

A significant component of establishing a productive learning environment occurs before students arrive, in the careful planning of classroom organization, routines and procedures, and behavior guidelines that allow meaningful learning opportunities to proceed smoothly. While this is planning that is separate and in addition to your planning for content instruction, it is directly linked to your goals for science learning.

Learning Management Unit [approx. 10 weeks]

Big Idea for Unit

Students in a productive learning environment are less likely to pose behavior problems because they are engaged in meaningful activities. Thus, a second significant component of establishing and maintaining a productive learning environment is the careful planning of management strategies that allow meaningful learning opportunities to proceed smoothly. This is planning that is directly linked to your goals for science learning and results from a focus on student understanding rather than control of student behavior.

Internship Experience

During your seven-eight weeks in secondary classrooms, you will be co-teaching with your mentor and planning and teaching *at least two weeks of lessons in one class*. A suggested schedule is as follows:

Weeks 1-3

Co-Teaching

(helping to plan and deliver lessons, working with small groups of students, monitoring lab activities)

Planning for your teaching weeks

(spending the additional time with your mentor teacher to discuss topics and lesson activities)

Weeks 4-5

Teaching

(planning and delivering the instruction, including lab set-up and clean-up, and grading student work)

Weeks 6-7/8

Co-Teaching

(working with students in whatever capacity your mentor teacher feels is appropriate)

The schedule given above is only a suggested schedule. You and your mentor teacher can decide which two weeks you will be teaching. Also, the two weeks of teaching is only a minimum; you and your mentor teacher can decide that you will teach longer than that. *The goal for this experience is to have you work with students as much as possible.*

During your internship weeks, you will have assignments based on both our on-campus work and your internship work. In addition, we will devote some class time to discussions of your internship experience.

Course Activities

Reflective Journal

Every other week, I will ask you to spend some time reflecting on and writing your responses to questions related to course activities, both on-campus and in your internship classrooms. I will provide each set of questions a week in advance via e-mail. Your journal entries are to be submitted via e-mail to both instructors by **3:00 p.m. on the Monday** that each is due (novod@email.arizona.edu & maddenj1@mindspring.com). **The first entry will be due on Monday, September 8.**

We will reply with comments within the following week. This is meant to a dialogue between us regarding your changing views and deepening understandings. Your grade for this aspect of the course will be based solely on completion, although we do expect thoughtful and reflective contributions. (We will let you know if you need to make improvements in that regard.)

Written Assignments

You will have several written assignments throughout the course of the semester, including analysis of classroom environments and artifacts, analysis of case studies, and unit and the final assessment. Since one of the goals of this course is that you learn to communicate clearly, these assignments will be graded for content as well as form; e.g., proper grammar and sentence structure, correct spelling, overall clarity. (Note that this class is designated as a writing-intensive course.)

Performance

You will have several performance assignments throughout the course of the semester, including lesson presentations in our classroom and in the school classrooms, and assessment of your work with students in the school classrooms. Since one of the goals of this course is that you learn to communicate clearly, you will be graded for content as well as the quality of your presentation; e.g., clear organization, good verbal skills, and appropriate use of visual aids.

Attendance and Participation

You are expected to attend all class sessions and participate in all class activities. If you need to be absent, please let one of the instructors know via e-mail as soon as possible. If you need to miss any of your scheduled internship days, you need to notify your mentor teacher, and you will need to make up that day.

Since our class meets in the ILC, you may only bring in drinks in covered containers, but food is not allowed. You are expected to turn off your cell phones during class (but since we are underground, you probably won't get a signal anyway!).

Student Assessment

The individual assignments will be graded using the following numerical scale:

0	5	6	7	8	9	10
Not turned in	Inadequate	Sufficient	Fair	Good	Very Good	Excellent

- 10** The product addresses *all* the questions or tasks presented in the assignment, and reflects a high degree of intellectual engagement with the questions or tasks. *All* the conclusions are justified with appropriate rationales and/or references. In addition, the product is clearly written and well organized, with no major grammar or spelling errors.
- 9** The product addresses *most* of the questions or tasks presented in the assignment, and reflects a high degree of intellectual engagement with the questions or tasks. *Most* conclusions are justified and the product is clearly written and well organized, with no major grammar or spelling errors.
- 8** The product addresses *most* of the questions or tasks presented in the assignment, but reflects a limited amount of intellectual engagement with the questions or tasks or the work and conclusions are incompletely justified. The product is clearly written and well organized, with no major grammar or spelling errors.
- 7** The product does not address all the questions or tasks presented in the assignment and reflects a limited amount of intellectual engagement with the questions or tasks. The work and conclusions are incompletely justified. The product reflects a moderate understanding of the goals of the assignment or a lack of attention to detail in producing a finished product.
- 6** The product does not address *most* of the questions or tasks presented in the assignment and reflects a limited amount of intellectual engagement with the questions or tasks. The work and conclusions are incompletely justified. The product reflects a lack of understanding of the goals of the assignment or a lack of attention to detail in producing a finished product.
- 5** The product does not address *most* of the questions or tasks presented in the assignment and the product is so poorly written that it indicates a serious lack of understanding and responsibility.

Note that all assignments turned in late will be assessed and returned with comments, but will earn a 0 grade.

Final Grades

Your final grades will be calculated using the following weighting scheme:

Reflective Journal	10%
Course Assignments	30%
Internship Work*	20%
Unit Assessments	20%
Final Assessment#	10%
Participation & Attendance#	10%

*Your mentor teacher will assess this.

#Scheduled for Friday, December 12, from 2:00-4:00 p.m.

#This includes class sessions as well as all your scheduled secondary classroom hours.

Your final grade in the course will be assigned according to the following:

Average	Grade
[9.0-10.0]	A
[8.0-9.0)	B
[7.0-8.0)	C
[6.0-7.0)	D
[0-6.0)	E

Incomplete grades will not be given. There will be no exceptions other than those associated with family tragedies or serious illness.

