

STUDENT COURSE SYLLABUS

SCED 360: Secondary School Science Laboratory Applications II

Spring, 2006

3 semester hours



Prerequisites: Consent of the instructor

Instructor: Dr. Murat Kahveci, Office YD 606

Meeting Time: MMMFF 56767

Office Hours: By appointment anytime

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Course Website

<http://kahveci.boun.edu.tr>

Please note that this is a hybrid class, part situated at the laboratory, the classroom, and the course website. Students are required to log into the website after each class to gather assignments and submission procedures. It is also helpful in this class to check your email account on a regular basis. You will need to register yourself for this class with an active email address, preferably your boun address. BET11NNH is the registration code for SCED 360. Thus, **this syllabus is subject to change.**

Course Overview

SCED 360 is meant to provide opportunities for preservice teachers to think about and reflect on the teaching of secondary school science laboratory. Once that process of thought and reflection becomes commonplace, then opportunities for designing and critiquing science laboratory curriculum will be provided. However, in order to design curricula well, one needs to have a firm grounding in the science education community's current understandings of how we learn science, and how best to support that learning. Thus, the intent of this class is not to simply provide a list of lesson plans and activities. Instead, this class should help the student develop a philosophy and approach to teaching science using laboratory that is informed through current research and understandings of her/his own practice.

Course Goals

The focus of the course is to provide students with an opportunity for:

- a. familiarity with cognitive principles and guidelines for science instruction
- b. developing a coherent and informed professional stance toward teaching science using laboratory
- c. familiarity with planning laboratory experiences that can allow for learning in a group of students
- d. develop organizational and instructional skills for effective science laboratory

Expectations

In this class we will refine and develop what we know in a social setting, teaching science laboratory at high school level. Your ideas and those of your fellow students are the basis of the meanings we will make from this class. Thus, this is not a lecture class and information cannot be simply obtained by "getting the notes" from a classmate. Therefore, attendance is expected and you are to be professional in your class participation. Professionalism includes, but is not limited to, such things as excellence in class assignments, constructive class participation, being a positive contributor to group work, taking advantage of opportunities to broaden personal knowledge and skills, and going beyond the minimum in all your work and interactions.

Required Texts

Redish, E.F. (1996). *Teaching Physics with the Physics Suite*. Available Online at:
<http://www2.physics.umd.edu/~redish/Book/>.
 Only Chapters 2, 3, 6, and 8.

Assessment

All assignments must be submitted on or before the due date. Likewise, all presentations will be conducted on the day they are scheduled. The following is a brief description of the assignments, which will be completed as part of this class. Additional details and evaluation criteria will be provided and discussed during future class meetings.

Participation & Professionalism (20 %)

Class sessions are predominantly interactive with a heavy emphasis upon collaborative efforts. As a consequence, in-class activities for which points are assigned cannot be “made up” outside of class.

Participation- Active participation includes, but is not limited to, attending to seminar/presentation content, communicating and offering suggestions, feedback and/or analysis during discussions. Obviously, if you do not attend class, you cannot participate. For those students who rely upon external incentives to accomplish the participation goals, the following policy is in effect. Habitually coming to class more than 10 minutes late will result in a 1% penalty for each occurrence. Missing class will result in a 2 % points deducted from the total, but missing more than three class sessions will require that you meet with me to discuss ***continued enrollment*** in the class.

Professionalism- A specific, though not inclusive, list of behaviors that addresses professionalism includes: completing assignments in a timely fashion, displaying evolving attitudes toward teaching and learning, developing assignments that are of high quality, demonstrating and openness to suggestions, seeking advice when needed, and sharing ideas with others.

Critical Reviews (40%)

There is no midterms. Instead, four critical reviews will be required during the semester, each of which will weigh 10% of the total score. The details like format of the critical reviews and due dates will be announced at the course web site.

Final Project (40%)

There will be no final examination. Instead, a report of your research (i.e. Final Project) developed throughout the semester will be assessed (see Assessment of Work). Throughout the semester, students should keep a reflective journal for the course, a journal that will consist of four main components:

Observations (10%)

You will be required to complete 10 lab sessions of observation/teaching/tutoring of secondary school laboratory classrooms. *After each observation session, you will reflect on and write about what you’ve witnessed and discuss what you’ve learned that can inform your own teaching.*

Science Interview of Middle School Students (10%)

You are to interview two high school students about your laboratory teaching. High school students refer to two class-mates in the context of this course. You should use

a variety of interview techniques (i.e., students' drawings, hands-on materials, and counter-suggestion) and create a report about the interview.

Presentation of Your Laboratory Instruction, Observations, and Interview Results
(10%)

Powerpoint presentations will be held near the end of the semester. Please check the course web site for due dates and all of the group work arrangements.

Report (10%)

You are to compile and submit a report of your work named under Final Project.

Assessment of Work

When completing written assignments, remember that your audience will be colleagues and the instructor from the course. Written work should demonstrate your interests, experiences from your teaching, and ideas from current educational literature. Although you have considerable freedom in your presentation choices, your writing should always be reflective and professional. Reflective and professional writing should include an objective and a constructive discussion of the topic. Try to avoid simply listing events and experiences. That is, attend to the degree to which you are pushing your thinking. By moving beyond simple description of your experiences, your interpretations and attempts to understand issues will likely reach beyond surface discussions.

Written Assignment Performance Standards

Grade Weights for all written assignments are determined using the following criteria:

- 70%=Content (See rubric below)
- 20%= Grammar-Ability to communicate, and
- 10%=On time.

- 7-** Fully achieves the purpose of the task. Insightfully interprets, extends beyond task, raises provocative questions. Demonstrates an in-depth understanding of concepts and content. Communicates effectively and clearly.
- 6-** Accomplishes the purposes of the task; shows a clear understanding of concepts. Communicates effectively.
- 5-** Substantially completes the purpose of the task. Displays understanding of major concepts, even though some less important ideas may be missing. Generally communicates successfully.
- 4-** Purposes of the task are not fully achieved; needs elaboration; some concepts may be ineffectually stated or inappropriate. Assumptions may be flawed. Gaps in conceptual understanding; unclear
- 3-** Important purposes of the task are not achieved; work may need to be redirected.
- 2-** Purposes of the task are not accomplished; little evidence of appropriate reasoning.

Grading

The grading scale used for the determination of final grades will be based on a standard university grading scale. Plus and minus grades will be used in borderline cases only.