

Teaching Methods in Science

SCED 420 Course Syllabus

Instructor: Murat Kahveci, Ph.D. | Office: YD 607 | Email: murat.kahveci@boun.edu.tr

Institute: Boğaziçi University, Faculty of Education

Date: Monday 10:00 a.m.–12:00 p.m. & Friday 3:00–4:00 p.m.

Version: Fall 2005. **This syllabus is subject to change.**

Course: SCED 420, Teaching Methods in Science, 3 Semester Hours

Prerequisites: ED 262

<http://mkahveci.com>

Introduction

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Course Details

- Prerequisites:** ED 262
Instructor: Dr. Murat Kahveci, Office YD 607
Meeting Time: Monday 10:00 a.m.–12:00 p.m. & Friday 3:00–4:00 p.m.
Office Hours: Mondays, 12:00–1:30 p.m., and by appointment
Phone: 359-7274
Email: murat.kahveci@boun.edu.tr
Website: <http://mkahveci.com>

Please note that this is a hybrid class, part situated at the university 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 to check your email account regularly. You will need to register for this class with an active email address, preferably your Boğaziçi University address.

 **Note** *This syllabus is subject to change. The course schedule section will be updated on a weekly basis.*

1.1 Course Overview

SCED 420 is meant to provide students with theoretical and conceptual approaches to the teaching and learning process. The scope of the class includes teaching methods, strategies, techniques, and principles specific to the area of science education.

1.2 Course Goals

The focus of the course will be:

- ① To obtain the theoretical background on the basic assumptions, concepts, and principles of each learning theory.
- ② To establish the possible implications of each theory for instructional settings.
- ③ To discuss your own learning theory and compare it with established learning theories.
- ④ To revise and critique your own theory at the end of the class.

1.3 Course Expectations and Assignments

This is not a lecture class — information cannot simply be obtained by getting notes from a classmate. You are to read the assignments posted to the course website before coming to class and be ready for discussion. Attendance is expected, and you are to be professional in your class participation. Professionalism includes, but is not limited to: excellence in class assignments, constructive 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.

There are three kinds of required products in this course.

1.3.1 Short Papers (40%)

Every Monday, you will submit a short paper containing your thoughts on the topic posted to the course website that week.¹ As part of this assignment, you will also read and reflect on a classmate's paper the following week. Reflections will be anonymous for both parties, and scoring criteria will be posted to the website. Be prepared for weekly class discussions on what you have learned through this activity.

1.3.2 Personal Learning Theory (10%)

At the beginning of the course, you will submit a draft of your personal learning theory. You will also read and write an anonymous reflection on a classmate's learning theory. At the end of the course, after engaging with each of the learning theories covered, you will submit a revised draft of your personal learning theory and give a short presentation near the end of the semester.



Note *The personal learning theory assignment runs across the full semester. Submit your initial draft in the first week. Your final revised draft and presentation will occur near the end of the term.*

1.3.3 Final Project (30%)

Details will be provided during the semester. This final writing product will be based on an in-class activity and will require the application of all the learning theories previously covered.

1.4 Required Texts

- Baker, D.R., & Piburn, M.D. (1997). *Constructing Science in Middle and Secondary School Science Classrooms*. Needham Heights, MA: Allyn & Bacon.
- Driscoll, M.P. (2000). *Psychology of Learning for Instruction*. Needham Heights, MA: Allyn & Bacon. (Selected readings will be copied and provided as needed.)

1.5 Participation & Professionalism (20%)

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

¹Short papers should be 2–3 pages long. Format: Font: Times New Roman, 10 pt; Margins: 1 inch on all sides.

Definition 1.1 (What is Professionalism?)

In Merriam-Webster, **professionalism** is defined as “the conduct, aims, or qualities that characterize or mark a profession or a professional person.”



In the context of SCED 420, professionalism is demonstrated through:

- ① Completing assignments in a timely fashion.
- ② Displaying evolving attitudes toward teaching and learning.
- ③ Developing assignments that are of high quality.
- ④ Demonstrating openness to suggestions.
- ⑤ Seeking advice when needed and sharing ideas with others.

Participation Policy

Active participation includes, but is not limited to, attending to seminar and presentation content, communicating and offering suggestions, and providing feedback and analysis during discussions. Students who rely on external incentives to meet participation goals should be aware of the following policy:

- Missing more than 45 minutes of a class: –2% per occurrence.
- Habitually arriving more than 10 minutes late: –1% per occurrence.
- Missing a class session: –5% per occurrence.
- Missing more than three class sessions requires a meeting with the instructor to discuss continued enrollment.



Note If you do not attend class, you cannot participate and will forfeit in-class activity points for that session.

1.6 Assessment of Work

When completing written assignments, remember that your audience is your colleagues and the course instructor. 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 includes an objective and constructive discussion of the topic. Avoid simply listing events and experiences — 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 and ability to communicate
- 10%** — Submitted on time

Example 1.1 Performance rubric for written assignments:

- 7** Fully achieves the purpose of the task. Insightfully interprets, extends beyond the task, raises provocative questions. Demonstrates 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.

1.7 Course Grading

The total grade for the course is based on Participation & Professionalism, Short Papers, Personal Learning Theory, and the Final Project.

Category	Weight	Thresholds	Letter Grade
Participation & Professionalism	20%	100 – 93	A
Short Papers (weekly)	40%	92 – 89	A–
Personal Learning Theory	10%	88 – 85	B+
Final Project	30%	84 – 81	B
Total	100%	80 – 77	B–
		76 – 73	C+
		72 – 69	C
		68 – 65	C–
		64 – 60	D
		0 – 59	F

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