Course Syllabus
EDCI 428
Teaching Science in the Middle / Junior High School
Spring 2014
(January 13 - February 23)

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Phone: 49-66647
Office Hours: by appointment

Time: Tuesday/Thursday: 1:30 - 4:20
Room: BRNG 3276
Text: A packet of readings is available from Copy Mat.

Introduction

Middle level teaching is different from high school or elementary teaching, and middle level students are different from either high school or elementary students. They are, as their name indicates, in between and in the process of becoming. It is an interesting, sometimes stressful, period in a young person's life. Therefore middle level is an interesting, sometimes stressful, environment in which to teach.

Together we will explore the terrain concerning what young adolescents are like and how they learn. Ask yourself to remember what you thought and felt when you were in grades 5, 6, 7, and 8! As a class we will coach each other, and hopefully we will all become better teachers. Teachers spend a lifetime perfecting their art but we only have six weeks. If discipline problems arise during your microteaching remember that you will be graded on effort in classroom management, not perfection. You are only required to address discipline problems, and you may always call a time-out without any penalty if you don't know what to do.

Objectives

This course is designed to address the following questions:

1. What are the characteristics of middle level students?
2. How are middle level classrooms structured?
3. What are the desired learning outcomes for middle level students?
4. How does a science teacher manage middle level students?
5. How does a science teacher effectively teach in a multicultural environment?

The readings, activities, and assignments of this course are built around these questions. The purpose of this course is to help you work out your own answers to these questions. By the end of this course, you should be able to:

1. State your goals for middle level science teaching based on an informed position.
2. Use questions, demonstrations, and activities to probe students' concepts.
3. Describe teaching strategies which motivate students and which foster learning.
4. Teach a science lesson employing appropriate strategies.
Assignments and Grading

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Number of Points</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>1. Microteaching</td>
<td>100</td>
<td>as assigned</td>
</tr>
<tr>
<td>2. Participation and attendance</td>
<td>30</td>
<td>throughout</td>
</tr>
<tr>
<td>3. Shared journal article</td>
<td>20</td>
<td>Week #6</td>
</tr>
<tr>
<td>4. Final Goal Statement</td>
<td>100</td>
<td>Thursday, February 20</td>
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<tr>
<td>Total Points</td>
<td>250</td>
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Microteaching:
You will develop and teach one 30-40 minute lesson in a science topic of your choice, using the lesson plan format given out in class. This cannot be the same lesson you taught in secondary methods. You may choose to do a demonstration, a lecture, an activity, or a combination of these. You will be asked to make enough copies of your lesson plan, including handouts and background information, for everyone in the class. In this way everyone can begin to build a file of lesson plans which will be an invaluable start in your professional career.

You will be videotaped when you are teaching the class. In addition to reviewing the written critiques of your teaching, you are asked to view the videotape and submit a written reflection upon the strengths and weaknesses of your teaching. This is done to encourage you to habitually reflect upon your own teaching.

A good grade on microteaching means that the lesson showed thought and care in planning and execution and that the lesson (often with revisions) has a reasonable chance of success in a real world classroom. A good grade is not a guarantee of success in a classroom.

Participation and Attendance:
Social interaction and discussion are vital to learning in this course. You are learning how to teach what you know, and the only way this can be done is by coaching, practice, and discussion. You must not only show up, you must actively participate! If you will be absent for any reason, please notify me before the start of class. Email notification is often the most effective and quickest form of communication. Because you are training to be a professional person, you never miss this class without first notifying me. A professional person is never absent from work without first notifying their supervisor, and I apply the same standard of courtesy to this class.

As part of your class participation you will lead a class discussion about an assigned reading. The discussion should include an activity designed to convey the key points of the article. Your are expected to teach, not give a book report! In addition, you must also find a journal article about teaching middle school students to share with the class during the last week of the course. We do this because journals and collaboration with your peers are important components of professional development as teachers.

Final Goal Statement:
You should be able to state your goals for middle level science teaching based on an informed position. On one page, using three paragraphs, you will (1) state your beliefs about the characteristics of middle school students, (2) state your goals for middle level science teaching, and (3) state how these beliefs and goals will be reflected in specific instructional strategies. Pretend you are writing to a principal to apply for a position. The page will be printed with 1.5 line spacing and one-inch margins. Font size must be 12 points.
Extra Credit:

50 bonus points will be applied towards your grade for attending the Hoosier Association of Science Teachers Inc. convention in February 5-7 (see below).

Grading:

Grades in the course will be computed on the basis of the total number of points accumulated divided by the total number of points possible. There are no preset limits on grades. If everyone garners enough points, everyone will earn an A. These points are converted to whole number percentiles, and the following scale will be applied:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
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<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>&lt;60%</td>
<td>F</td>
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Professional Organizations:

You should consider joining the National Science Teachers' Association (NSTA), which is the major professional organization for precollege science teachers. Membership includes a subscription to The Science Teacher. The web address is www.nsta.org/

Another professional organization you might wish to consider is the National Middle School Association (NMSA), a professional organization for middle level educators who teach young people between the ages of 10 and 14. Membership includes a subscription to the Middle School Journal. The web address is www.nmsa.org/

You will also become acquainted with the Hoosier Association for Science Teachers, Inc. (HASTI). In fact I encourage you to attend the HASTI conference on February 6-8. Proof of registration and/or attendance is awarded 50 bonus points toward your grade. The web address is www.hasti.org/.

Adaptive Programs:

Students with disabilities must be registered with Adaptive Programs in the Office of the Dean of Students before classroom accommodations can be provided. If you are eligible for academic accommodations because you have a documented disability that will impact your work in this class, please schedule an appointment with me as soon as possible to discuss your needs.

Emergencies:

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. Here are ways to get information about changes in this course: my email address, mnakhleh@purdue.edu, and my office phone, 494-5314.

Academic Dishonesty:

Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty." [Part 5, Section III-B-2-a, <http://www.purdue.edu/univregs/> University Regulations] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying
during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest.” [University Senate Document 72-18, December 15, 1972].

**Class Attendance:**

Purdue University policy states that all students are expected to be present for every meeting of classes in which they are enrolled. All matters relative to attendance, including the make-up of missed work, are to be arranged between you and the instructor. Only the instructor can excuse you from classes or course responsibilities. In the case of an illness, accident, or an emergency, you should make direct contact with your instructor as soon as possible, preferably before the class. If the instructor cannot be reached directly a message should be left in the instructor’s department mailbox or with the instructor’s secretary. If you will be absent for more than five days, have not been able to reach the instructor in person or by telephone or through leaving notification of your circumstances with the instructor's secretary, you or your representative should notify the Office of the Dean of Students (765-494-1254) as soon as possible after becoming aware that the absence is necessary. Be advised, you may be asked to provide documentation from an authorized professional or agency that supports an explanation for your absence.

In plain English: Don’t be absent. If you plan to be absent or are absent for any reason let me know—immediately.

**Indiana Standards:**

Following is the URL for IN Middle School Standards:


You will need to state the relevant IN Standard for the lesson that you teach.