I. COURSE TITLE: Laboratory in Teaching Science: Middle School

II. COURSE DESCRIPTION: A concentrated laboratory experience for upper division students seeking middle school certification with a teaching field in science. Includes directed and supervised teaching experiences with middle school students in area schools. Prerequisites: EDU 303, MID 270, Admission to Teacher Education

III. PURPOSE: To provide directed and supervised teaching experience in partial fulfillment of the requirements for the Murray State University middle school science teacher preparation program. This course is designed to enable the student to understand and facilitate the teaching of science, both in process and in content. It will enable the student to increase and apply skills in planning, development, and implementation of instruction in the middle school grades, and assist in preparation for student teaching.

IV. COURSE OBJECTIVES: The behaviors indicated below are understood to be reflective of, but not limited to those behaviors advocated by the Kentucky Education Reform Act guidelines. Following each objective, and enclosed in parentheses, are numbers that reference the Kentucky Teacher Standards for Preparation and Certification (KTS). As a result of participation in this course, students will:

A. Demonstrate awareness of the role of Kentucky’s Core Content for Assessment, Academic Goals and Expectations, and National Science Education Standards in instructional planning for middle school science teaching. (KTS #2)

B. Develop instructional goals, learning objectives, and lesson plans for middle school science students. (KTS #2)

C. Demonstrate several approaches to teaching middle school science, with an emphasis on inquiry-based/discovery teaching. (KTS #3, 4)

D. Identify, assess, and interpret middle school student progress in the learning of science content and process skills. (KTS #5)

E. Plan and carry out appropriate interventions designed to help middle school students having difficulty with science content or process skills, including those with special needs. (KTS #4, 5, 7)

F. Carry out planned science instruction in a middle school classroom under direct supervision. (KTS #4, 5)

G. Describe middle school science instructional activities that have a significant environmental science component. (KTS #1, 9)

H. Review computer-based and traditional instructional materials for suitability in middle school science teaching. (KTS #2, 3)

I. Demonstrate acceptable professional behavior and knowledge of the rights of individuals in a middle school science setting. (KTS #57, 9)

The COE Theme of the Educator as a Reflective Decision-maker is addressed in this
course by urging students to consider the teacher’s role in deciding appropriate lesson plans for their practicum teaching experiences. In addition, students will select appropriate teaching strategies for these “teaching” lessons. Finally, after presenting the lesson, students will reflect and critique their teaching assignments. The goals of the critique are to identify positives, negatives and ways to improve future “teaching” assignments, thus enabling students to become more effective educators in the future.

The EPSB Theme of Diversity is explored in this course through the use of accommodations for learners with disabilities who are either mainstreamed or included with regular education students in their practicum assignments. In addition, students will learn and develop teaching strategies enabling them to teach science to all students, regardless of gender, ethnicity, learning styles, or exceptionalities.

V. CONTENT OUTLINE:
A. National Science Education Standards
B. KY Goals and Science Academic Expectations
C. KY Science Core Content for Middle Grades
D. Science process skills
E. Planning
   1. Units and lessons
   2. Goals and objectives
F. Approaches to science teaching
G. Assessing and assisting student progress
H. Providing for special needs
I. Clinical and field experiences and requirements
J. Environmental education awareness
K. Use of technology

VI. INSTRUCTIONAL ACTIVITIES:
Group discussions, demonstrations, field experiences, formative and summative evaluations, journaling, lectures, lesson planning, unit development, cooperative learning activities.

VII. FIELD AND CLINICAL, AND/OR LABORATORY EXPERIENCES:
Students will participate in a minimum of 12 field-based laboratory hours working with middle school science students.

VIII. RESOURCES:
A. MSU’s Waterfield Library
B. NASA Education Resource
C. Library of assigned middle school
D. Computer Centers (throughout the campus)
E. COE Library/Media Center (Room 341 Alexander Hall)

IX. GRADING PROCEDURES:
A. Field Procedure:
1. At their assigned middle school, MSU students will participate in a minimum of 12 hours of field experience. Of these **4-6 hours should be actual whole class or small group teaching time.** The other hours should be allocated to observing science teaching methods and to participating in middle school science classroom activities. Participation activities could include performing individualized instruction, working on bulletin boards, helping to construct teacher-made tests, assisting teachers during their science instruction, and similar experiences.

2. MSU Instructors will expect MSU students to establish and maintain a written daily log of observations, experiences and reflections, and to develop written lesson plans for all teaching experiences. MSU students will also be expected to solicit and respond to feedback from the classroom teachers about their teaching.

3. At the conclusion of the field experience, the classroom teachers will be asked to evaluate the MSU students with the “Evaluation of Participating Student” form, based upon the new teacher standards.

4. Obtain a copy of the textbook that is being used by your practicum teacher.

5. If possible, you will “teach” four times during the practicum with the practicum teacher observing three “lessons” and a MSU professor observing one “lesson” for at least thirty (30) minutes. The “lesson plan” observed by the professor will be graded by the course instructor per standards set forth in a rubric that will be provided in advance.

**B. Course Assignments**

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<thead>
<tr>
<th>Task</th>
<th>Points</th>
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<tbody>
<tr>
<td>Foldable</td>
<td>15</td>
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<tr>
<td>Interactive Bulletin Board</td>
<td>20</td>
</tr>
<tr>
<td>WebQuest</td>
<td>20</td>
</tr>
<tr>
<td>Professional Growth Plan</td>
<td>20</td>
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<tr>
<td>Midterm examination</td>
<td>50</td>
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<tr>
<td>Practicum Portfolio</td>
<td>150</td>
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<tr>
<td>Science Methods Portfolio (6x25)</td>
<td>150</td>
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<tr>
<td><strong>Total:</strong></td>
<td>425</td>
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**C. Cooperative Work Group:**

When students are participating in an instructor assigned cooperative learning experience, students in the group will be sharing information and writing the final product together. Therefore, in this specific case, students within the group may exchange work with each other, collaborate together and submit each others work so long as the work submitted is their original work. The group project must adhere to the current MSU Academic Honesty Policy guidelines in this section that applies to work done by people outside their cooperative work team.

**D. Grading Scale:**

<table>
<thead>
<tr>
<th>Grading Scale (by average)</th>
<th>(letter)</th>
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<tbody>
<tr>
<td>100-90</td>
<td>A</td>
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X. ATTENDANCE POLICY:
This course adheres to the attendance policy published in the current MSU Undergraduate Bulletin.
A. Attendance will be taken and recorded during all class sessions.
B. Students must e-mail or telephone the instructor indicating the reason for the absence (preferably before class).
C. Class will start on time.
D. Students assume the responsibility for informing the instructor of a tardy arrival. A tardy is defined as arriving to class after attendance has been taken. Two tardies will equal one absence.
E. Students must complete the 12 hours of practicum experience at the participating middle school.
   • You are expected to be on time for your practicum hours at your scheduled time at the participating middle school.
   • If you will be missing any hours of the practicum, you must email or telephone me and your practicum teacher prior to any practicum absence.
   • If you must miss practicum hours (for an excused reason), you will be required to make-up the hours on your own time after gaining approval from me and the practicum teacher.
F. Two or more absences may result in the following consequences: the final grade may be lowered by one or more letter grades and/or a negative flag may be placed on materials submitted to Teacher Education Services.

XI. ACADEMIC HONESTY POLICY:
This course adheres to the academic honesty policy published in the current MSU Undergraduate Bulletin.

XII. TEXTS AND REFERENCES:
MyEducationLab User License to accompany text
LiveText User License for Professional Portfolio

XIII. PREREQUISITIES: EDU 303, MID 270, Admission to Teacher Education

XIV. NON-DISCRIMINATION POLICY STATEMENT:
Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or other provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to
afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact Director of Equal Opportunity, Murray State University, 103 Wells Hall, Murray, KY 42071-3318. Telephone: 270-809-3155 (voice), 270-809-3361 (TDD).

XV. FLAG SYSTEM/ CONTINUOUS ASSESSMENT:
Student progress is continuously assessed throughout the teacher preparation program. Appropriate professional characteristics and demeanors, in addition to academic achievement, are assessed. Positive and negative flags are submitted by faculty to Teacher Education Services and then presented to admissions committees. Negative flags are carefully reviewed to make a determination as to whether a student should be denied admission OR if a professional development plan will be designed for the student’s progress towards program completion. NEGATIVE FLAGS MAY BE GROUNDS FOR DENIAL OF ADMISSION TO TEACHER EDUCATION AND/OR STUDENT TEACHING.

Note: Students are expected to dress professionally for all school visits.

NOTE: The professor expects that cell phones, pagers, and other electronic paging devices will be turned off during class time and stored away (unless an emergency dictates otherwise). The cell phone should not be in use during class time – this includes text messaging.