I. TITLE: ELE 402 Teaching Science in Elementary P-5

II. CATALOG DESCRIPTION: An exploration of content, materials, and methods of teaching science at the elementary level. Activities include discussions, experiments, field trips, and observation of children. Field experiences required including participation in a 24-hour Friday overnight environmental education retreat at LBL. Prerequisite: ELE 307 and admission to Teacher Education.

III. PURPOSE:
The purposes of this course are to:
A. increase your awareness, interest, and confidence in P-5 science teaching.
B. provide you with a solid foundation of science teaching methods, materials, experiences, and content appropriate for grades K-4.

IV. COURSE OBJECTIVES:
Class activities will be centered on the attainment of the course objectives listed below. These objectives 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 which reference the Kentucky New Teacher Standards for Preparation and Certification (NTS) addressed by that objective. The KERA student learning goals are also identified. At the end of this course, you will be able to:
A. Prepare appropriate science lessons and identify the process skills involved. (NTS# 1)
B. Prepare science materials and experiments for children. (NTS# 1)
C. Demonstrate effective questioning techniques with peers and children during science lessons. (NTS# 2, 3, 4)
D. Identify science program materials and commercial products used in teaching elementary science. (NTS# 1, 7, 8)
E. Describe and demonstrate how other subject areas can be integrated with the teaching of science. (NTS# 3, 5, 8)
F. Demonstrate how to obtain materials and equipment for science instruction using available resources. (NTS# 1, 2)
G. Demonstrate how to administer a successful science experiment for children in a selected elementary grade. (NTS# 3)
H. Demonstrate proficiency with a computer for science related purposes. (NTS# 1, 2, 3, 9)
I. Demonstrate an awareness of environmental issues. (NTS# 1, 6, 7, 8)
J. Develop an awareness of your professional self, and an understanding of the importance of the rights of individuals and accepted professional behavior. (NTS# 2, 5, 6, 7)
The COE Theme of Educator as Reflective Decision-Maker is addressed in this course by requiring students to reflect on their practicum field experiences, Day of Science project, group investigations, and Environmental Education Retreat.

The EPSB Themes of Diversity, Assessment, Literacy/Reading, and Closing the Achievement Gap will be explored through various chapters within the text and more specifically in topics chosen for the Collaborative Group Presentations such as: No Child Left Behind, Technology, Gifted and Talented, Behavior Disorders, Gender Issues in Education, and Cultural Diversity Issues in Education.

V. CONTENT OUTLINE:
A. Strategies and Techniques
B. Constructing Knowledge and Discovering
C. The Inquiry Process Skills
D. Planning and managing science teaching
E. Strategies and QuickChecks
F. Assessment of Understanding and Inquiry
G. Integrating science teaching with other subjects
H. Science WebQuest
I. Adapting science teaching for all/Parts Two, Three, and Four

VI. INSTRUCTIONAL ACTIVITIES:
A. Group discussions
B. Question generation
C. Group hands-on investigations
D. Lectures and guest speaker
E. Instructional planning
F. Practicum teaching
G. Textbook reading
H. Computer activities
I. Reflections and assessments

VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:
You must complete each of the following three field experience activities for course credit.
A. Environmental Education Retreat.
B. Day of Science service project.
C. Practicum consisting of five two-hour classroom visits to a designated elementary school, during which you teach two science lessons successfully (and also two social studies lessons in partial fulfillment of a similar requirement for ELE 401) to elementary school children.

VIII. RESOURCES:
A. Center for Environmental Education – 3rd floor Alexander Hall
B. Waterfield Library - periodicals and LB1585 section
C. NASA Education Resource Center [in basement of Waterfield Library]
D. Computer laboratories throughout campus
E. Curriculum Materials Center – 341 Alexander Hall
F. Internet
G. Blackboard
H. Other resources provided by the instructor
I. Kentucky Department of Education
J. National Science Teachers Association
K. Kentucky Science Teachers Association

IX. GRADING PROCEDURES:
Grades will be earned for participation and performance in individual, group, and whole-class instructional activities. Articulation, professionalism, standard English, and neatness are extremely important in presentations and written assignments. Grades will be earned based upon completion of the classroom activities and participation in field experiences. The instructor reserves the right to adjust the point values and assignments as necessary to meet the objectives of the course.

Grading Scale (by average) (letter)

| 100-90 | A |
| 89-80  | B |
| 79-70  | C |
| 69-60  | D |
| 59 and below | E |

Course Assignments

<table>
<thead>
<tr>
<th>Assessment Opportunities</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm examination</td>
<td>50</td>
</tr>
<tr>
<td>Practicum teaching and related written assignments</td>
<td>200</td>
</tr>
<tr>
<td>Written assignments</td>
<td>120</td>
</tr>
<tr>
<td>Participation/written reflection in DoS and Environmental Ed Weekend</td>
<td>130</td>
</tr>
<tr>
<td>Portfolio</td>
<td>100</td>
</tr>
</tbody>
</table>

X. ATTENDANCE POLICY:
This course adheres to the attendance policy published in the current MSU Undergraduate Bulletin. More than two 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 stated in the current MSU Undergraduate Bulletin. In addition to the above disciplinary action, grades will be lowered or invalidated if cheating, plagiarism, and/or doing work for another person is substantiated.
XII. TEXT AND REFERENCES:

XIII. PREREQUISITE: admission to Teacher Education

XIV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:
Murray State University does not discriminate on the basis of race, color, national origin,
gender, sexual orientation, religion, age or disability in employment or the provision of
services and provides, upon request, reasonable accommodation including auxiliary aids
and services necessary to afford individuals with disabilities an equal opportunity to
participate in all programs and activities.

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.