

**Department of Mathematics and Science Education  
Secondary Science Teacher Education Program  
Fall Semester 2007  
ESCI 4450/6450, ESCI 4460/6460, and ESCI 3450**

Class Meeting Time: M-F 8:00-10:55 Meeting Locations: 215 Aderhold Hall & schools

**Instructors:**

Dr. Tom Koballa  
Office: 212 Aderhold Hall  
Office Hours: by appointment  
E-mail: tkoballa@uga.edu  
Office Phone: 542.1763

Mike Mueller  
Office: 212 Aderhold Hall  
Office Hours:  
E-mail: mmueller@uga.edu  
Office Phone: 542.1763

Ms. Jessie Morris  
Office: 210 Aderhold Hall  
E-mail: draper@uga.edu

Mr. Sam O'Dell  
Office: 210 Aderhold Hall  
E-mail: sro@uga.edu

**ESCI 4450/6450 Science Curriculum and Learning**

Science curriculum models for students in grades 7 through 12 in relation to goals for science education and classroom practice. Development, selection, and evaluation of curriculum materials based on research in learning.  
Prerequisite: EPSY 2020 and EFND 2030

**ESCI 4460/6460 Methods of Science Teaching**

Science instructional strategies and classroom assessment for grades 7 through 12. Classroom management, lesson planning, and safety in the science classroom.  
Prerequisite: EPSY 2020 and EFND 2030  
Co-requisite: ESCI 3450 and ESCI 4450/6450

**ESCI 3450 Practicum in Science Education**

Intensive school-based experiences in grades 7 through 12 requiring students to teach in varied cultural and regional settings.

**Nature of Course Syllabi**

The course syllabi for ESCI 4450/6450, ESCI 4460/6460, and ESCI 3450 are general plans for the courses; deviations announced to the class by the instructors may be necessary. WEBCT will serve as the platform for communication and feedback about many of the course assignments. Information about how to use WEBCT to facilitate your work will be presented throughout the semester.

**Attendance Policy**

Good attendance and punctuality are critical elements of teacher professionalism. It is recognized that students get sick, attend professional meetings, and have family emergencies, but attendance and participation are prerequisites to learning. For the purposes of class attendance only, the semester will be broken into 3 periods associated with each of the block courses.

Period 1 (ESCI 4460/6460) – August 17 through September 21

Period 2 (ESCI 3450) – September 24 through October 24

Period 3 (ESCI 4450/6450) – October 29 through December 5

If you miss no more than one day during any period, are on time each day, and participate in class activities, you may earn all the points for attendance and participation towards the grade for the course associated with that period. Two unexcused absences (i.e., without written documentation) will result in the deduction of points equivalent to 3% of your course grade. Each tardy beyond the first will result in the deduction of points equivalent to 1% from your course grade. Arriving more than 30 minutes late or leaving class with 30 minutes or more remaining will be counted as an absence. If you have extenuating circumstances that cause you to be absent more than twice during any period (e.g., serious illness with written documentation), please consult Dr. Koballa or Mr. Mueller about how you might make up the missed days. If you are absent from more than four class meeting during the semester, you may be dropped from the three Block I courses.

### **Academic Honesty**

The University of Georgia seeks to promote and ensure academic honesty and personal integrity among students and other members of the University community. In keeping with the University Honor Code and Academic Honesty Policy, each student is expected to do his/her academic work and to acknowledge fully any assistance and academic resources. All academic work must meet the standards contained in "A Culture of Honesty." All students are responsible to inform themselves about those standards before performing any academic work.

### **A Note About Observations**

During the semester you will be observed as you teach by your university instructors, classroom teachers, and your classmates. These observations are opportunities to gain insight into your teaching through the perspectives of others. Talking about your teaching with others is an important mechanism for improving your understandings about science content, teaching, and student learning. Assignments for ESCI 4450/6450 and ESCI 4460/6460 may ask that you make arrangements to have an instructor observe you teach.

### **Textbooks**

#### **Required**

Chiappetta, E. L., & Koballa, T. R. (2006). *Science instruction in middle and secondary schools*. Upper Saddle River, NJ: Merrill Prentice-Hall.

Koballa, T. R., & Tippins, D. J. (2004). *Cases in middle and secondary science education: The promise and dilemmas*. Upper Saddle River, NJ: Merrill Prentice-Hall.

Driver, R., Squires, A., Rushworth, P., & Wood-Robinson, V. (1994). *Making sense of secondary science: Research into children's ideas*. London: RoutledgeFalmer.

#### **Optional**

Wong, H. K., & Wong, R. T. (1991). *The first days of school: How to be an effective teacher*. Sunnyvale, CA: H. K. Wong Publications.

The proposed structure for Block I as well as various course assignments are based on conversation with and instructional materials developed by Dr. Norm Thomson, Dr. Carolyn Wallace, Dr. Steve Oliver, Dr. Lynn Bryan, Dr. Art Recesso, and Dr. Frank Crawley. Thanks guys for your insights about science teaching and learning.

### **ESCI 4450/6450: Science Curriculum and Learning**

In this course, you will learn about essential aspects of science curriculum and how curriculum can be used to enable student learning. The course is organized around three major themes: (1) science is a way of thinking and investigating as well as a body of knowledge, (2) effective instructional planning enables and facilitates student learning, and (3) standards and assessment are inextricably linked, guiding how teachers teach and what students learn. Topics to be addressed include: the nature of science, inquiry, social context of science teaching, context of science, curriculum, and professional practice. The following driving questions will be explored in this course:

1. What is science? How can school science help students become scientifically literate citizens?
2. What is inquiry? What does inquiry look like in the context of school science?
3. How can community resources and students' interests be used to plan science lessons that are relevant and appropriate?
4. What innovative instructional materials are available for use in guiding students' science learning?
5. How can teachers plan instructional experiences to actively engage students in meaningful science learning?
6. What are your personal teaching goals and beliefs about teaching? How can participation in activities of the professional community of science teachers enable you to develop as a teacher?

#### **Course Goals**

By the end of this semester, you will be able to:

- Demonstrate your understanding of the nature of science and strategies for teaching students about the nature of science.
- Plan and teach lessons, including those that are laboratory-based, that address the essential features of science inquiry as described in National Science Education Standards.
- Show that you understand of relationships among core concepts in the science discipline(s) you will teach.
- Plan and carry out instruction that will enable students to learn science and develop an interest in science.

#### **Course Requirements and Grading Summary**

1. Attendance and participation	5% (=25 points)
2. Organization of core science concepts	15% (=75 points)
3. Laboratory lesson	20% (=100 points)
4. Curriculum unit or Extended investigation	25% (=125 points)
5. Mid-tem examination	5% (=25 points)
6. Reflective journal	10% (=50 points)
7. Final Portfolio	20% (=100 points)
Total Possible Points	500 points

Grades are assigned by summing each students' points and dividing by 500 to obtain a percentage with 93-100 percent = A; 90-92 percent = A-; 87-89 percent = B+; 83-86 percent = B; 80-82 percent = B-; 77-79 percent = C+; 73-76 percent = C; 70-72 percent = C-; etc.

### Curriculum Course Assignments

If you have questions about an assignment, please consult one of the instructors. The assignments may have a performance (teaching) component to them, as well as a written component. All written components of the assignments must be typed and submitted through WEBCT.

- 1. Attendance and participation** – This assignment is explained in the introduction to the block courses.
- 2. Organization of core science concepts** – Teachers are central to helping students develop age-appropriate, expert-like understandings of science. Teachers must recognize their own understanding of the hierarchical structure of the science discipline they teach. In this assignment, you will construct a map of the conceptual terrain for a science course that you plan to teach (e.g., high school biology). In doing so, you will develop a visual representation of your understanding of the hierarchical structure and interconnections that exist among the core science concepts that comprise a science course. A handout posted on WEBCT will provide more details about this assignment. **Due on Monday, September 24.**
- 3. Laboratory lesson** – The purpose of this assignment is for you to develop understandings about laboratory-based science instruction appropriate for secondary school students. You will design and conduct a laboratory lesson that highlights aspects of the nature of science and features of science inquiry. The grade for this assignment will be based on your lesson plan, teaching performance, and written reflection. A handout posted on WEBCT will provide more details about this assignment. **Due on Monday, November 19.**
- 4. Curriculum unit**– Well-designed curriculum units can lead to meaningful science learning. A curriculum unit is a segment of a course of study that reflects coherence, is aligned with standards, and develops in students a deep understands of concepts, principles, and topics. For this assignment, you will develop a science curriculum unit suitable for a high school or middle school course. Handouts posted on WEBCT will provide more details about these two assignments. **Due on Monday, November 19.**
- 5. Mid-term examination** – The examination will cover textbook readings and topics addressed in class. More information about the examination format will be shared in class prior to the examination date. **Examination date: Wednesday, October 5.**
- 6. Reflective journal** - Throughout the semester, you will be asked to reflect on your course-related readings and class experiences. A handout posted on WEBCT will provide more details about what is expect to be included in the journal. **Journals will be read periodically throughout the semester.**
- 7. Final portfolio** – The purpose of this assignment is to enable you to consider and document your developing understandings of science teaching and learning based on national standards for science teacher preparation. You will develop an electronic portfolio in which you provide evidence and reflections specific to standards' indicators. A handout will be given in class with more details. **Due on December 6.**

### **ESCI 4460/6460: Methods of Science Teaching**

In this course, you will learn the essential elements of planning, teaching, and assessment in the secondary science classroom. The course is organized around three major themes: (1) engaging students in active learning in science, (2) teaching science for all students, and (3) continuing to learn from your own teaching. Topics to be addressed include: science content, teaching skills, assessment, and environment for learning. The following driving questions will be explored in this course:

1. How do adolescents learn science? What is the difference between learning and just completing the task?
2. How can teachers plan instruction to actively engage students and present a variety of representations?
3. How can teachers teach so that all students may learn science?
4. How can teachers organize the classroom environment to facilitate student learning?
5. What are the most effective ways to assess students' science learning?

#### **Course Goals**

By the end of this semester, you will be able to:

- Demonstrate knowledge of the fundamental skills needed for planning, teaching, and assessing in the secondary classroom.
- Show that you can effectively engage students in active science learning through multiple teaching strategies.
- Plan, conduct, and assess a science demonstration.
- Explain how students learn science and apply these ideas in lesson planning.
- Demonstrate that you can teach science to a class of adolescent learners.

#### **Course Requirements and Grading Summary**

1. Attendance and participation	5% (=25 points)
2. Learning environment plan	20% (=100 points)
3. Demonstration lesson	20% (=100 points)
4. Assessment analysis	20% (=100 points)
5. Mid-term examination	5% (=25 points)
6. Reflective journal	10% (50 points)
7. Final Portfolio	20% (=100 points)
Total Possible Points	500 points

Grades are assigned by summing each students' points and dividing by 500 to obtain a percentage with 93-100 percent = A; 90-92 percent = A-; 87-89 percent = B+; 83-86 percent = B; 80-82 percent = B-; 77-79 percent = C+; 73-76 percent = C; 70-72 percent = C-; etc.

### Methods Course Assignments

If you have questions about an assignment, please consult the instructors. The assignments may have a performance (teaching) component to them, as well as a written component. All written components of the assignments must be typed and submitted through WEBCT.

- 1. Attendance and participation** – This assignment is explained in the introduction to the block courses.
- 2. Learning environment plan** – A positive learning environment is crucial to students' academic success and wellbeing. To promote a positive learning environment, the teacher must engage in actions that are consistent with the educational aims of the school and considerate of students' personal and educational needs. In this assignment, you will develop a plan to motivate and engage students as science learners. Your plan will address what science teachers need to know about the first days of school, how students learn, possible causes of middle and high school students' inappropriate behavior, strategies for building positive teacher-student and student-student relationships, and organizational and management strategies to develop productive learning habits among students. A handout will be given in class and posted on WEBCT with more details. **Due Monday, September 7.**
- 3. Assessment analysis** – This assignment will allow you to take an in-depth look at students' science test performance. To complete this assignment, you will grade and examine a set of tests given by you or another teacher. You will analyze the students' performance using descriptive statistics. In a three-page double-spaced paper, you will present your analysis as well as your hypotheses on why the students performed as they did. A handout will be given in class and posted on WEBCT with more details. **Due Wednesday, October 15.**
- 4. Demonstration lesson** – This assignment will enhance your understanding of a powerful teaching strategy known as demonstration. After viewing some demonstrations, you will plan and conduct a demonstration lesson. Your demonstration will involve questions that you ask students and address one or more of the essential features of inquiry. You will be graded on your lesson performance, your lesson plan, and a written reflection. A handout will be distributed in class and posted on WEBCT that provides details about this assignment. **Due on Wednesday, November 5.**
- 5. Mid-term examination** – The examination will cover textbook readings and topics addressed in class. More information about the examination format will be shared in class prior to the examination date. **Examination date: Wednesday, October 5.**
- 6. Reflective journal** - Throughout the semester, you will be asked to reflect on your course-related readings and class experiences. A handout posted on WEBCT will provide more details about what is expected to be included in the journal. **Journals will be read periodically throughout the semester.**
- 7. Final Portfolio** – The purpose of this assignment is to enable you to consider and document your developing understandings of science teaching and learning based on national standards for science teacher preparation. You will develop an electronic portfolio in which you provide evidence and reflections specific to standards' indicators. A handout will be given in class and posted on WEBCT with more details. **Due on December 6.**

### **ESCI 3450: Practicum in Science Education**

In this practicum, you will interact with students and teachers in schools. The intent of this practicum is to allow you to experience science teaching and learning in middle and high school classrooms. The practicum will also enable you to test some of your developing understandings about students, teaching, planning, assessment, and the learning environment. The topics addressed in the practicum are the same as those described for ESCI 4450/6450 and ESCI 4460/6460. While in science classrooms, you will observe, work with small groups of students, assist classroom teachers in many ways, and lead instruction. It is important to remember that while in schools and interacting with teachers and students, **YOU ARE THE UNIVERSITY of GEORGIA**. Please ensure that your actions reflect well on yourself and the University.

The driving questions and course goals for this practicum are the same as those for ESCI 4450/6450 and ESCI 4460/6460. Your time in science classrooms should enable you to develop richer and better-informed answers for the driving questions and achieve the goals within the context of secondary school science.

#### **Course Requirements and Grading Summary**

1. School journal	80% (=400 points)
2. Practicum tasks (includes teacher evaluation)	20% (=100 points)
Total Possible Points	500 points

Grades are assigned by summing each students' points and dividing by 500 to obtain a percentage with 93-100 percent = A; 90-92 percent = A-; 87-89 percent = B+; 83-86 percent = B; 80-82 percent = B-; 77-79 percent = C+; 73-76 percent = C; 70-72 percent = C-; etc.

#### **Practicum Course Assignments**

The assignments described below Other assignments associated with the curriculum or methods course for purposes of grading and record keeping may be carried out during the practicum experience. If you have questions about an assignment, please consult the instructors. Assignments may have a performance (teaching) component to them, as well as a written component. All written components of the assignment must be typed and submitted through WEBCT.

- 1. School journal** – During your time in schools, you will be expected to keep a journal that documents your experiences and reflections related to those experiences. A handout posted on WEBCT will provide more details about what is expect to be included in this journal. **Journals will be read periodically throughout the practicum experience.**
- 2. Practicum tasks** – In addition to performing the “Daily Practicum Tasks” listed on the attached page, you will be expected engage in selected tasks from the “Possible Practicum Experiences.” A handout posted on WEBCT will provide more details about the kind and number of tasks to be completed. **Due the last day of practicum.**

The proposed structure for this course as well as various course assignments are based on conversation with and instructional materials developed by Dr. Norm Thomson, Dr.

Carolyn Wallace, Dr. Steve Oliver, Dr. Lynn Bryan, Dr. Art Recesso, and Dr. Frank Crawley. Thanks guys for your insights about science teaching and learning.

### **Daily Practicum Tasks**

1. Find the appropriate place to park in the school lot. Introduce yourself at the office as a future science teacher representing the University of Georgia. Always be patient and courteous, wear a smile, and comment positively about the school, students, and teachers. Your positive comments may make someone's day, its infectious, and they will remember and look forward to your arrival each day.
2. "Sign in" in the office upon your arrival, get a nametag, and "sign out" when you exit the school. Remember that the principal is responsible for knowing at all times who is in her/his building.
3. Walk around the campus so you get to know more about the high school and middle school science areas, where the faculty restrooms are located, etc.
4. If one exists, consider visiting the faculty workroom to find out what goes on there. It is recommended that you not discuss politics or religious affiliation. For issues that involve the politics of the school remain neutral or quiet—you are a visitor and guest of the school, not a sounding board, mediator, or negotiator. Similarly, some teachers may use the faculty workroom to complain about colleagues or students. Avoid the discussion, but learn from what you hear.

### **Possible Practicum Experiences**

1. Examine the school's web site. From the web site or other sources, learn about the school motto, mascot, philosophy and rules. If you don't find the student handbook and school calendar, ask where this information can be obtained. The student handbook includes information about school rules, grading, homework arrangements, curriculum, extracurricular activities, etc.
2. Make a sketch of the classrooms you are working in and learn the names of students. Do this the first day and memorize the names of students the first night. This is not only the first element of effective classroom management, but it shows the students that you care about who they are. Ask your teacher about how she/he prepares for the first day of school, introduces the year's work and classroom rules. What are the safety rules in the science classroom and how are emergencies handled, first aid, and fire extinguishers? Is students' work displayed in the classroom? If teachers are using a computerized system for record keeping, ask to see how it is done.
3. Conduct interviews with first-year teachers and ask them about the joys and challenges that they associate with their jobs. Write a report summarizing the teachers' responses and giving your opinion about whether you share their ideas about the joys and challenges of teaching.
4. Interview a science teacher who has served as the mentor for beginning teachers in the past. Ask the teacher about his or her expectations for a beginning science teacher in the areas of lesson planning, instruction, classroom management, and learning assessment. Prepare a report summarizing your findings and drawing conclusions regarding your own preparation for science teaching.

5. The National Science Teachers Association (NSTA) is the largest organization in the world committed to the advancement of science teaching. Access the NSTA web site [www.nsta.org] and check out its teacher resources, events for science teachers, and professional journals—*The Science Teacher*, for high school teachers, and *Science Scope*, for middle school teachers. Join NSTA as a student member.
6. Start a notebook of science teaching ideas and materials. Organize your notebook into sections (e.g., classroom environment, assessment, safety, demonstrations, etc.) and add your reflections regarding the usefulness of ideas and materials included.
7. Interview two students about their science learning experiences. In a paragraph, describe how their comments reflected the themes of scientific literacy: (1) science as a way of thinking, (2) science as a way of investigating, (3) science as a body of knowledge, and (4) science and its interactions with technology and society.
8. Gather instructional materials from a teacher that he or she uses to teach students about the nature of science. Compare the concepts taught by the teacher with those discussed by Dr. William McComas in his chapter about the myths of science. [This chapter is available on-line at Dr. McComas' web site.]
9. Administer Chiappetta and Koballa's "Myths of Science" quiz to several teachers or students and then discuss their answers with them. Write a paragraph that describes their responses to the quiz and thinking about the nature of science. [The quiz is in the November 2004 issue of *The Science Teacher*, page 58-61 and on page 90 of your textbook.
10. Draw a floor plan for a middle school or high school classroom that would facilitate quality science instruction and reduce the probability of student misbehavior. On the floor plan, show the location of students' and teacher's desk, student laboratory stations, safety equipment (e.g., first aid kit, fire blanket, safety shower, etc.), materials and equipment storage, chalkboard or overhead projector and screen, and doorways. Also draw lines to represent student traffic patterns.
11. Observe a science class taught by a veteran teacher and pay particular attention to how he or she addresses the areas of classroom environment, including interpersonal relationships, organization and management, and lesson design and teaching. Arrange to meet with the teacher after the class to discuss your observations. Direct the discussion to have the teacher talk about his or her reasons for the management decisions and strategies you observed.
12. Talk with a school principal or the assistant principal in charge of discipline. Ask about the school's disciplinary procedures and under what conditions it is considered appropriate for teachers to send students to the school office for discipline.
13. Select a concept or topic from a middle or high school science course that you believe student find boring. Develop a plan to teach the concept or topic in a way that will motivate students to be engaged science learners.
14. Interview two science teachers about their lesson assessment practices. Ask about alignment among standards, instruction, and assessment.
15. Develop a set of class rules that you would display in your classroom. Show the class rules to science teachers and ask what changes they would recommend. Write a paragraph that describes how you would introduce class rules to students. Include in

your paragraph information about the level of student involvement in constructing the class rules.

16. Ask a veteran science teacher to assess his or her own lesson assessment practices using the checklist presented in Table 6.3 of the textbook. Discuss your own thoughts with him or her about lesson assessment and determine what changes he or she would suggest to improve the checklist and your own thinking about lesson assessment.
17. Interview two science teachers about the Georgia Performance Standards for the courses that they teach. Ask how they standards influence their teaching and student learning.
18. Show your map of the core concepts in the science discipline you plan to teach to veteran science teachers. Have them comment on your map and describe how a map that they might construct would be different from your map.
19. Talk with teachers about web sites and computer software that they consider valuable resources for teaching science. Explore one or more of the site or software packages. Describe in a paragraph how the sites or software could be used to help student learn science.
20. Ask teachers to allow you to examine curriculum units that they have developed. After examining the units, talk with the teachers about them. Ask about the vision and philosophy that supports the unit, the standards addressed in the unit, and how student learning of unit content is assessed.
21. Make arrangements to observe a lesson taught by a veteran middle or high school science teacher and to speak with the teacher after the lesson. Ask the teacher about the lesson's purpose, planning, instruction, classroom management, and assessment. Write a paragraph about your experience in which you compare your thoughts about the lesson with those of the teacher. Share your paragraph with other beginning teachers.
22. Find out what resources are available for teaching science in a school. Also, check out the library/media center for science books, videos, etc. What is the annual science budget for science? Is the budget the same or different for other subjects?
23. Interview any two of the following school staff people to gain their perspectives of the school, their role in the lives of students and teachers, and why they enjoy their careers: office staff worker, cook, custodian, nurse, guidance counselor, security officer, bus driver, etc.
24. During one lesson observation make a seating chart and record the distribution of classroom discussion by making a tally of the way the period is spent. Your recording categories could be: discussion, worksheet assignments, group work, question-and-answer, student notetaking, etc. Your tallies may reveal differences by gender, race, or room position. Write a paragraph that summarizes your observations.
25. Observe two lessons that are other than science. Carefully focus on the style of instruction. How do the lessons compare to science lessons? Based on your observations, what seems to make science lessons unique? Summarize your responses to the questions in a paragraph.

26. Request a copy of the year's syllabus for the classes you observe. Also, ask for some sample lesson plans and tests. Become familiar with the Georgia Performance Standards for the classes you observe.
27. Teach as often as possible. First consider team-teaching with a peer, your mentor teacher, or your university course instructors. Also, request to teach small groups of students. Then, try to teach a lesson or part of a lesson on your own.

Fall Semester 2007

**Tentative Daily Calendar Secondary Science Teacher Education, Block 1**

**August**

Friday, Aug 17 UGA	Block I overview, Course Syllabi and Assignments, WEBCT Meet in 215 Aderhold Hall [Koballa, Mueller, Morris, & O'Dell]
Monday, Aug 20 UGA	Twenty Minute Morning [Koballa & Mueller]
Wednesday, Aug 22 UGA	Thoughts and Actions of Beginning Teachers Read: <i>Science Instruction</i> , Chapter 1 and Standards for Science Teacher Preparation at <a href="http://www.nsta.org/main/pdfs/NSTASTandards2003.pdf">http://www.nsta.org/main/pdfs/NSTASTandards2003.pdf</a> [Koballa, Mueller, Morris, & O'Dell]
Friday, Aug 22 UGA	Purpose of Teaching Science and Lesson Assessment System Read: <i>Science Instruction</i> , Chapters 2 and 6 [Koballa, Mueller, Morris, & O'Dell]
Monday, Aug 27 UGA	Science Learning Environment Read: <i>Science Instruction</i> , Chapter 5; <i>Cases</i> , Case 5.3 [Koballa, Mueller, Morris, & O'Dell]
Wednesday, Aug 29 UGA	Fire Safety and Prevention Ms. Tori Outlaw & ESD Staff Environmental Safety Division Annex, Will Hunter Road
Friday, Aug 30	Safety in the Laboratory and Classroom Read: <i>Science Instruction</i> , Chapter 14; <i>Cases</i> , Case 5.2 [Koballa, Mueller, Morris, & O'Dell]

**September**

Monday, Sept 3	Labor Day Holiday
Wednesday, Sept 5 UGA	Student Learning and Organization of Core Science Course Concepts Assignment Read: Georgia Performance Standards for science at <a href="http://www.georgiastandards.org">http://www.georgiastandards.org</a> ; <i>Science Instruction</i> , Chapter 9 [Koballa, Mueller, Morris, & O'Dell]
Friday, Sept 7 UGA	Planning To Teach Science (examine lesson plans, write instructional objectives, & links to assessments)

	Read: <i>Science Instruction</i> , Chapters 3; Cases, [Koballa, Mueller, Morris, & O'Dell] <b>Due: Learning Environment Plan</b>
Monday, Sept 10 RMS/WBHS	Observing and Teaching
Wednesday, Sep 12 RMS/WBHS	Observing and Teaching
Friday, Sep 14 RMS/WBHS	Observation and Teaching <b>Tentative</b> Barrow County Tour (meet at 5:00 PM) Optional: Attend WBHS Football Game
Monday, Sept 17 RMS/WBHS	Observing and Teaching
Wednesday, Sep 19 RMS/WBHS	Observing and Teaching
Friday, Sep 21 RMS/WBHS	Observing and Teaching
Monday, Sept 24 RMS/WBHS	Observing and Teaching <b>Due: Organization of Core Science Course Concepts</b>
Wednesday, Sep 26 RMS/WBHS	Observing and Teaching
Friday, Sep 28 RMS/WBHS	Observing and Teaching

**October**

Monday, Oct 1 UGA	Diverse Adolescent Learners and Their Schools Read: <i>Science Instruction</i> , Chapter 8; <i>Cases</i> , Case 2.1 & Case 2.4 [Koballa, Mueller, Morris, & O'Dell]
Wednesday, Oct 3 UGA	Verbal Interactions in Science Teaching Read: <i>Science Instruction</i> , Chapter 5 and pages 163-166 & 175-178 [Koballa, Mueller, Morris, & O'Dell]
Friday, Oct 5	<b>Mid-Term Exam</b> Verbal Interactions in Science Teaching Continues Read: <i>Science Instruction</i> , Chapter 5 and pages 163-166 & 175-178 [Koballa, Mueller, Morris, & O'Dell]
Monday, Oct 8 UGA	Planning for a Mini Unit, Laboratory and Demonstration Lesson Assignments, Nature of Science [Koballa, Mueller, Morris, & O'Dell]
Wednesday, Oct 10 UGA	Nature of Science Continued ...
Friday, Oct 12 Athens Tech	Tour of Technical & Industrial Division Departments
Monday, Oct 15 RMS/WBHS	Observing and Teaching <b>Due: Assessment Analysis</b>

Wednesday, Oct 17 RMS/WBHS	Observing and Teaching
Friday, Oct 19 RMS/WBHS	Observation and Teaching
Monday, Oct 22 RMS/WBHS	Observing and Teaching
Wednesday, Oct 24 RMS/WBHS	Observing and Teaching
Friday, Oct 26	Fall Break
Monday, Oct 29 UGA	Multifaceted Assessment, Objective Test Items (true-false, multiple choice, matching, etc.) Assessment Analysis Assignment [Koballa, Mueller, Morris, & O'Dell] Barrow County Schools Fall Break
Wednesday, Oct 31 UGA	Alternative assessment formats (e.g., concept map, lab report, drawing, etc.) or Scoring Rubrics and Checklists [Koballa, Mueller, Morris, & O'Dell] Barrow County Schools Fall Break

**November**

Friday, Nov 2 RMS/WBHS	Observing and Teaching
Monday, Nov 5 RMS/WBHS	Observing and Teaching <b>Due: Demonstration Lesson</b>
Wednesday, Nov 7 RMS/WBHS	Observing and Teaching
Friday, Nov 9 RMS/WBHS	Observation and Teaching
Monday, Nov 12 RMS/WBHS	Observation and Teaching
Wednesday, Nov 14 RMS/WBHS	Observation and Teaching
Friday, Nov 16 RMS/WBHS	Observation and Teaching
Monday, Nov 19 UGA	TBA <b>Due: Laboratory Lesson</b>
Wednesday, Nov 21 MCHS/MCMS	Thanksgiving Holiday
Friday, Nov 23	Thanksgiving Holiday
Monday, Nov 26 UGA	TBA
Wednesday, Nov 28 UGA	TBA <b>Due: Curriculum Unit</b>

Friday, Nov 30 Atlanta	National Association of Biology Teachers Conference
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**December**

Monday, Dec 3 UGA	Electronic Portfolio Preparation
Wednesday, Dec 5 UGA	Electronic Portfolio Preparation <b>Due: Electronic Portfolios</b>
Final Exam Period	Share Portfolio Highlights