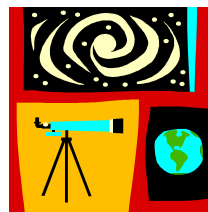


AUBURN UNIVERSITY



## SYLLABUS

**Course Number:** CTSE 4000

**Course Title:** Technology and Applications in Science

**Credit Hours:** 2 semester hours

**Prerequisites:** None

**Co-requisites:** None

**Date Syllabus Prepared:** August 18, 2010

Fall, 2010

Location: Haley Center 3430

Class Duration: August 18 – December 3, 2009

Class Time: Tuesdays, 11:00 a.m.-1:00 p.m.

Office hours: Tuesdays, 9:00-11:00 a.m. or by appointment

Instructor: Dr. Carolyn Wallace

Office: 5002 Haley Center

Phone: 334-844-0927

E-mail: [csw0013@auburn.edu](mailto:csw0013@auburn.edu)

### Required Textbook and Readings:

1. The course required text is Bell, R. L., Gess-Newsome, J., & Luft, J. (2007). *Technology in the Secondary Science Classroom*. Washington, D. C.: NSTA Press. ISBN: 978-1-93353-127-4. This text is available at the University Bookstore in Haley Center or at [www.nsta.org](http://www.nsta.org).
2. Various other required readings will be available on the web.

### Course Description:

This course serves as an introduction to current instructional technologies for integration into the secondary science classroom. Students will explore, apply and evaluate technology that supports excellent teaching and student inquiry in science. This course will also meet the “knowledge of” standards of the State of Alabama Technology Standards for education.

### Course Objectives: *On completion of this course, you will be able to-*

- Use and evaluate technology tools that support science teaching and student scientific inquiry.
- Identify and appropriately use online and software resources for student learning in science and teacher professional growth and development.

- Meet the State of Alabama “knowledge of” Technology Standards for teacher education in the context of the science classroom. These include:
  - A. Knowledge of methods for assessing advantages and limitations of current and emerging technologies and tools for instruction, student assessment, management, reporting purposes and communication.
  - B. Knowledge of media communication technologies to enrich learning opportunities.
  - C. Knowledge of professional literature, research, organizations and other resources including the applications of technology for continuing professional development.
  - D. Media and technology applications for instruction, including the use of microcomputers and related Probeware and emerging technology.
  - E. Knowledge of available and emerging technologies that support the learning of all students.
  - F. Knowledge of the wide range of technologies that support and enhance instruction, including classroom and school resources as well as distance learning and online learning opportunities.
  - G. Knowledge of a range of curricular materials and technologies to support the cognitive development of diverse learners.
  - H. Knowledge of safe, responsible, legal, and ethical uses of technologies including fair-use and copyright guidelines and internet-user protection policies.

**Course Content, Schedule and Readings:** (Readings listed for a particular week are to be read *prior* to class that week).

**August 24-** Introduction to course, tour of the LRC, syllabus

**August 31-** Science teaching and learning

Reading: Brief essay on constructivism at

<http://webspace.oise.utoronto.ca/~benczela/Constructivism.html>; Bell, Chapter One

**September 7-** Presentation software, Power Points, digital images and video

Reading: Bell, Chapter Two

**September 14-** Using computer simulations (I)

Reading: Bell, Chapter Three

**September 21-** SMART Board and podcast applications

Reading: None

**September 28-** Using computer simulations (II)

Reading: None

***Due: Review of computer simulation***

**October 5** - Scientific inquiry as a teaching method

Reading: Chapter One from *Inquiry and the National Science Education Standards* by the National Academies Press (pp. 1 -11). Download the PDF file at <http://www.nap.edu/openbook.php?isbn=0309064767>

**October 12**- Web-based inquiry resources

Reading: Bell, Chapters Six and Seven

**October 19**- Using Probeware tools for investigation

Reading: Bell, Chapter Four

**October 26**- Web quests

Reading: Explore some areas of the site, [www.webquest.org](http://www.webquest.org)

**November 2**- Teacher websites (I)

Reading: None

***Due: Lesson Plan***

**November 9**- Teacher websites (II)

Reading: None

**November 16**- Teacher tools; safe, legal and ethical uses of multimedia

Reading: Handout to be given in class

**November 23**- Thanksgiving

**November 30**- Wrap up and project presentation

Reading: None

***Due: Teacher Website***

**December 7**- Final exam (option)

***Due: Final project (option)***

**Course Requirements/Assignments:**

1. Review of computer simulation (15%)
2. Participation in online discussions on Blackboard (15%)
3. Lesson plan (15%)

4. Teacher website (25%)
5. Final project OR final exam (30%)

Note: Assignment #2 “Participation in online discussions on Blackboard” will be graded by the instructor, based on the criteria of ***depth of thought*** and ***significance to the content of the course***. **Each week (by the Thursday before) one student will be responsible for posting an interesting question to the Blackboard discussion board about the material from that week. I will pose the first question on Aug. 26 regarding the class on Aug. 24. All students should post a response by the next Tuesday, August 31.**

All other assignments will be described in detail in a separate handout.

#### **Evaluation and Grading Procedures:**

- A. All assignments except #2 will be graded using a grading rubric.
- B. Grades for each assignment will be assigned according to the rubric.
- C. Points for the assignments will be weighted as indicated above and summed to produce a final point total.
- D. Percentages will be applied and grades will be assigned as follows: **A:** 90+ points; **B:** 80-89 points; **C:** 70-79 points; **D:** 60-69 points; **F:** below 60 points.

#### **Course and University Policies:**

Participation: Students are expected to participate in all class discussions and participate in all exercises. It is the student’s responsibility to contact the instructor if assignment deadlines are not met. Students are responsible for initiating arrangements for missed work.

Attendance/Absences: Attendance is required at each class meeting. If an exam (final presentation) is missed, a make-up exam will be given only for University-approved excuses as outlined in the Tiger Cub. Arrangement to take the make-up exam must be made in advance. Students who miss an exam because of illness need a doctor’s statement for verification of sickness and should clear the absence with the instructor the day they return to class. Other unavoidable absences from campus must be documented and cleared with the instructor **in advance**.

Unannounced quizzes: There will be no unannounced quizzes.

Accommodations: Students who need accommodations are asked to arrange a meeting during the first week of classes, or as soon as possible if accommodations are needed immediately. To set up this meeting, please contact me by e-mail. Bring a copy of your Accommodation Memo

and an Instructor Verification Form to the meeting. If you do not have an Accommodation Memo but need accommodations, make an appointment with the Program for Students with Disabilities at 1244 Haley Center, 844-2096 (V/TT).

Honesty Code: The “University Academic Honesty Code” and the Tiger Cub “Rules and Regulations pertaining to Cheating” will apply to this class.

Professionalism: As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College’s conceptual framework. These professional commitments or dispositions are listed below:

- Engage in responsible and ethical professional practices
- Contribute to collaborative learning communities
- Demonstrate a commitment to diversity
- Model and nurture intellectual vitality