**AUBURN UNIVERSITY**

**SYLLABUS**

 **1.       Course Number:          CTSE 5000/ 6000**

 **Fall 2018 Room 2462 6-7:50 Mondays**

           Course Title:                 Technology and Applications in Science

           Credit Hours:                2 Semester Hours

           Prerequisites:               None

           Corequisites:                 None

 **2.        Instructors**

            Instructor: Dr. Christine Schnittka

Contact Information: schnittka@auburn.edu or (334) 844-8277

  Preferred method of contact: Email
 Office Hours: M and T from 2-4pm and by appointment.

**3.       Texts:        None required. Readings will be provided through *Canvas*.**

This course will require the use of the learning management system, ***Canvas*** which can be accessed from the Auburn University website (www.auburn.edu). An orientation can be provided if requested.

**Computer requirement:** You need a laptop computer you can bring to class (Mac or PC) and install software on for use. Please see your instructor if you do not have a laptop computer that you can bring to class and install software on. iPads or tables *may* work, but then again, they may not.

**4.          Course Description:**

This course serves as an introduction and application of current and emerging instruction and communication technologies for integration in the secondary science program.  It is an introduction to technology tools supporting inquiry, the Alabama Course of Study, the Next Generation Science Standards, and the National Science Education Standards in the secondary science classroom.

**5.         Course Objectives**

A. Facilitate and inspire student learning and creativity by providing a variety of learning environments that foster collaboration and innovative thinking to solve real world issues and authentic problems using digital tools and resources. 290-3-3-.42 (4)(b)1.

B. Design, develop, use, manage, and assess authentic digital-age learning experiences that are aligned with subject-area content and the Alabama Course of Study: Technology Education to maximize content learning and address diverse learning styles, incorporating the use of formative and summative measurement tools to better inform learning. 290-3-3-.42 (4)(b)2.

C. Model and facilitate innovative digital-age work and learning experiences through the effective use of current and emerging tools to ensure success in a global and digital world whereby the teacher and learner locate, analyze, evaluate, manage, and report information as well as communicate and collaborate online fluently using a variety of technology-based media formats. 290-3-3-.42 (4)(b)3.

D. Promote, model, and communicate the safe, legal and ethical principles of digital citizenship, equitable access, digital etiquette, and responsible online social interactions in a global culture including respect for copyright, intellectual property, the appropriate documentation of sources, and Internet user protection policies. 290-3-3-.42 (4)(b)4.

E. The role, nature, limitations, and use of media and technology for instruction and scientific investigation, including the use of virtual labs, computers, probeware, and other emerging technologies. 290-3-3-.14 (2)(e)2.(ii)

F. Engage in professional growth and leadership activities, including modeling lifelong learning by participating in face to face and online learning communities to continuously improve professional practice using existing and emerging digital tools, resources, and current research that focuses on improved student learning, as well as promotes professional development of other educators. 290-3-3-.42 (4)(b)5.

**6.      Course Content Outline**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week # | Class Meeting | Module # for HW assigned | In-Class Activities | Homework due that day at 6:00 |
| 1 | 8/20 | 1 | **Overview of Course**Inventory of skills.Introductions.How have you seen technology change in schools?SyllabusCanvasShow how to use library to access NSTA articles**Presentation Tools**[Sway](https://sway.com/)[Prezi](https://prezi.com/)[PowerPoint](http://www.office.com/)[Google Slides](https://www.google.com/slides/about/)[SlideShare](https://www.slideshare.net/)[SMART Notebook](http://education.smarttech.com/) and [SMART Exchange](http://exchange.smarttech.com/#tab=0)[Classroom Screen](https://classroomscreen.com/) | none |
| 2 | 8/27 | 2 | **Google**[Google Classroom](http://classroom.google.com/)[Science Journal with Google](http://sciencejournal.withgoogle.com/)[Google Expeditions](http://edu.google.com/expeditions)[Google Docs](https://www.google.com/docs/about/)[Google Drive](https://www.google.com/drive/)[Google Certified Educator](https://teachercenter.withgoogle.com/certification_level1)[Google Scholar](https://scholar.google.com/) | Make a presentation to introduce yourself. We will all look at these to study for the Name Quiz. Post URL on Canvas in Announcements. |
| 3 | Labor Day9/3 | 3 | No class | Complete Google Units 1 and 2 |
| 4 | 9/10 | 4 | Discuss Tech Article in groups. Type summary into G-docName Quiz**Observation and Inference**[windy.com](http://windy.com/)[Stellarium](http://stellarium.org/)Animal cams | Read one NSTA article on technology and submit summary.Complete Google Unit 3 |
| 5 | 9/17 | 5 | *Observation and Inference mini-lessons***Inquiry**[ExploreLearning](https://www.explorelearning.com/)[Paleobiology Database](https://paleobiodb.org/#/)[PhET](https://phet.colorado.edu/)[Google Earth](https://www.google.com/earth/)Show ExploreLearning and teach a demo lessonHave Ss grade me.Show lesson plan examples. | Prepare for Observation and Inference mini-lesson.Complete Google Unit 4 |
| 6 | 9/24 | 6 | **Flipping the Classroom**[Jing](https://www.techsmith.com/jing-tool.html)[Screencastify](https://www.screencastify.com/)Subscribe to YouTube Channels like KurzgesagtEffective use of presentation softwareDiscuss lesson planning with technology | Complete Google Unit 5Submit name of EL Gizmo  |
| 7 | 10/1 | 7 | **Assessment**[Kahoot](https://kahoot.com/)[Plickers](https://www.plickers.com/)[Flipgrid](https://flipgrid.com/)[ZipGrade](https://www.zipgrade.com/)[Quizlet](https://quizlet.com/)[Quizizz](https://quizizz.com/)[Socrative](https://www.socrative.com/)[Google Forms](https://docs.google.com/forms/u/0/)Legends of Learning SCHNI4**Google Forms** | Complete Gizmo lesson plan.Reflect on Bell & Smetana article.Post sample Jing on Google Classroom and upload to Canvas.Complete Google Unit 6 |
| 8 | 10/15 | 8 | *Assessment mini-lessons*Show how to use TinkerCADHow to use 3D printer | Prepare to conduct a mini-assessment of your choice.Read article on 3D printing Complete Google Unit 7Submit your Google Form URL |
| 9 | 10/22 | 9 | *ExploreLearning Presentations*  | Present EL LessonComplete Google Unit 8Start sharing your Google Form |
| 10 | 10/29 | 10 | Do Vernier inquiry activity Excel for scientific data analysis  | Read about Vernier.Install LoggerLiteComplete Google Units 9 & 10 |
| 11 | 11/5 | 11 | Excel for gradebooks and test analysis | Complete Google Unit 11 Google Form data dueDesign a Thing due |
| 12 | 11/12 | 12 | **Communication**Show teacher website examples[Remind](https://www.remind.com/)[Google Hangouts](https://hangouts.google.com/) | Turn in Excel data analysisComplete Google Unit 12 |
| 13 | 11/19 |  | Thanksgiving Break |  |
| 14 | 11/26 | 13 | **Mindmapping Tools**[Popplet](http://popplet.com/)<Bubbl.us>**Gamification**Send students to **login.legendsoflearning.com**and give them your teacher code: **SCHNI4** | Start Fake teacher website. Submit URLComplete Google Unit 13Bring Thing to class |
| 15 | 12/3 |  | **Creativity**WeVideoSoundtrapExplainEverything | No homework due today. Be working on your final exam projects! |
| 16 | 12/14 by 9:30pm | 14 | Submit Jing and Teacher Website and pass Google Exam. | Pass Google Level 1 Certified Educator Test. Upload your Jing URL.Teacher Website due. |

**7. Additional Course Requirements for CTSE 6000 (Graduate Students in the MS or PhD or Traditional MEd)**

 Graduate Students- Three research journal article reviews about educational technology:

 30 points

8. **Grading**

**Undergrads**

**Professionalism/Participation 10%**

**Class activities 10%**

**Reading and other assignments 50%**

**Final exam 20%**

**Google Certification 10%**

**For graduate students, teaching lesson will be averaged in with Class Activities, and article reviews will be averaged in with Assigned Readings.**

A = 90% or higher

B = 80% - 89%

C = 70% - 79%

D = 65% - 69%

F = below 65%

Any assignment presented or turned in late will be penalized 10% for each day late. Late assignments presented or turned in late after two days (after 6pm Wednesdays) will not be accepted without prior approval of the instructor.

AU eValuate Fall Semester evaluation dates: TBA

Extra Credit if evidence of AU eValuate is turned in (screenshot end of survey)

**8.   Class Policy Statements:**

Participation:  Students are expected to attend class, bring required materials, and participate in all class discussions and participate in all activities.  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. Non-class activities on computers, phones, or laptops will result in deductions from the participation grade.

Attendance/Absences:  Attendance is required at each class meeting.  Contact the instructor as soon as you know that you have to miss class for any reason. If an exam is missed, a make-up exam will be given only for University-approved excuses as outlined in the Student Policy Handbook [www.auburn.edu/studentpolicies](http://www.auburn.edu/studentpolicies) .  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.  All absences must be documented and cleared with the instructor **in advance**. All work missed, even class work, will need to be made up and turned in within one week. Homework is always due on the due-date, even if class is missed. Do not wait until the night before class to complete your assignments!

Unannounced quizzes:  There may be unannounced quizzes covering assigned readings.

Accommodations:  Students who need accommodations are asked to electronically submit their approved accommodations through AU Access and to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting, please contact me by e-mail. If you have not established accommodations through the Office of Accessibility, but need accommodations, make an appointment with the Office of Accessibility, 1228 Haley Center, 844-2096 (V/TT).

Honesty Code:  The University Academic Honesty Code and the Student Policy Handbook Rules and Regulations pertaining to Cheating will apply to this class. All work must be original. All infractions of the Academic Honesty Code will be reported to the Provost. (Note: All written work will be scanned for plagiarism. Be sure you know what plagiarism is.) Cheating will likely result in dismissal from the Teacher Education Program, and may result in dismissal from the university.

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
* Be kind

**9. Justification for offering CTSE 6000 as a graduate course:**

This course is designed to give the beginning teacher practical experience learning about and using educational technology to teach science. However, it gives the more advanced learner experience reviewing research related to the use of educational technology, and the opportunity to reflect upon his or her own teaching practice and analyze student results. The extra assignments for graduate students scaffolds them in the process of reading literature, carrying out a lesson with educational technology, collecting student data and analyzing the results. The graduate student will complete the course not only with the basic knowledge of implementing technology tools in the classroom, but with the more advanced application of reading, analyzing, and conducting research.