



Course SCI 5425-0T1, **Integrated Earth Science for Teachers**
Professor Rebekah K. Nix, Ph.D.
Term Spring, 2009
Meetings UT-TeleCampus at <http://www.telecampus.utsystem.edu/>

Professor's Contact Information

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Office Location FN 3.218

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Office Hours Physical office hours are limited and by appointment only; however, you may contact the instructor(s) via phone at the number listed above in case of emergency. Voice mail messages are usually retrieved on a daily basis, but responses may take up to a week depending on travel schedules.

Other Information Due to the asynchronous nature of the course, the preferred method for personal/individual communications is email. Instructors typically respond to messages within the day; however, it may take up to 48 hours for a complete response.

This course is taught completely online: there are no required on-campus meetings. Weekly lessons are accessible throughout the semester as defined by the UTD calendar (<http://www.utdallas.edu>). The asynchronous schedule allows you to work at your own pace *during the week*. Please note that the due dates for quizzes, assignments, and projects specified in this syllabus are not negotiable.

- Students must know how to access and navigate web pages on the Internet.
- Students must know how to send and receive electronic mail messages.

Although the instructor is virtually available 24/7, such flexibility demands self-discipline and a high level of independent motivation. This is a full semester course. You cannot just log in at the last minute and click your way to the end. You should budget at least 5 hours per week for this study – 3 for reviewing the lessons and activities (as you would do in an actual class meeting) plus 2 or more each week to work on the course homework and projects (as you would do your out-of-class research and laboratory assignments.)

As needed, be sure to take full advantage of these additional online resources provided to support your learning in this course, among others:

- UTTC Digital Library (see <http://www.uttc.org>)
- UTTC Academic Support (see <http://www.uttc.org>)

Remember that help is available all of the time. First, refer to the support materials you have on hand and on line. Then, if you're still stumped, contact:

- PASCO (<http://www.pasco.com>) for help with electronic probeware issues
- SunGard (1-866-321-2988, toll-free) if you encounter problems with the Blackboard interface,
- UTTC (telecampus@utsystem.edu) if you have access or student services questions, or
- SciMathEd (SciMathEd@utdallas.edu) if you need advice!

General Course Information

Pre-requisites, Co-requisites, & other restrictions

If you have any concerns about your readiness for this course, please discuss issues with your advisor.

1. Students must be eligible to take graduate courses at UTD.
2. Students must have completed successfully a minimum of 24 undergraduate hours in the natural sciences.
3. Students must know how to and be able to send/receive electronic mail messages.
4. Students must know how to and be able to access/navigate pages on the Internet.
5. Students must be fluent in Microsoft Office applications (Word and PowerPoint).
6. Students are expected to have some practical experience teaching and working with students in an educational setting, i.e. one semester teaching experience in science or consent of instructor.
7. Students are expected to have the ability to manipulate simple laboratory equipment and conduct independent experiments.

Course Description

No matter what your primary science degree is in, *Integrated Earth Science for Teachers* gives you a look at the content from the perspective of a teacher dealing with diverse populations. Earth science examines the topics of astronomy, oceanography, meteorology, physical geology, structural geology, and historical geology; however, in this class we will be adding physical and life sciences to the integration. Other topics included in the class milieu are reading, and mathematics. Focus is also placed on understanding how the classroom learning environment (through neurocognitive science) makes a difference in students' motivation to learn.

For over 30 years, Drs. Fred Fifer and Cynthia Ledbetter have delivered the content of this course in various educational settings – from ½-day workshops to year-long professional development programs in face-to-face settings through UTD.

Initially delivered by UTTC in Spring 2008, this online offering was co-authored by Drs. Rebekah K. Nix and Cynthia E. Ledbetter of the University of Texas at Dallas. Dr. Palma J. Longo consulted on the design as part of a pilot study on the use of Visual Thinking Networking in the online environment. Special funding was provided by the UT-TeleCampus to Dr. Nix to evaluate the use of third-party content from the National Repository of Online Courses to expedite course development. In addition, Mr. Richard L. Yepez produced key interactive elements for this online section.

Learning Outcomes

The goal of this course is for students to use knowledge of content and pedagogy to help learners gain proficiency in physical science. Toward that end, students will be able to demonstrate:

1. content knowledge by using models and making connections to other subjects;
2. pedagogical expertise by designing multi-modal lessons; and,
3. techniques for enhancing learning environments through reflective practice.

Texts, Readings, & Materials

Required Texts

The following 7 items can be purchased online from the Bureau of Economic Geology at <http://www.beg.utexas.edu/>

6 Page-Sized State Maps (color map and text, scale: 1 inch = 100 miles)

- **SM0002:** Geology of Texas Map. 1992; reprinted 1998.
- **SM0004:** Tectonic Map of Texas. 1994; reprinted 1998.
- **SM0005:** Physiographic Map of Texas. 1996; reprinted 1998.
- **SM0006:** River Basin Map of Texas. 1996; reprinted 1998.
- **SM0007:** Land Resources of Texas. 1999.
- **SM0008:** Vegetation/Cover Types of Texas. 1999.

1 Rock Kit, RK0001: Eight samples of Central Texas rocks, 1 data card.

Required Materials

Electronic data collection devices. In lieu of a textbook, you will need access to state-of-the-art probeware to complete the integrated science courses. These courses have been strategically designed to maximize your purchasing power. You may choose to acquire all items at once, or on an as-needed basis. To order, please call PASCO Scientific (<http://www.pasco.com>) at 800-772-8700 and ask for customer service. Identify yourself to PASCO as "UT Dallas online" to receive *special pricing*.

Required for all SCI 5425 Integrated Science for Teachers courses

- 1: **PS-2100**, USB Link
- 1: **PS-2125**, Temperature Sensor

Plus,

- 1: **PS-2102**, pH Sensor for *Integrated Earth Science for Teachers*

And, eventually you will likely also need:

- 1: PS-2103, Motion Sensor for *Integrated Physical Science for Teachers*
- 1: PS-2113A, Barometer Sensor for *Integrated Life Science for Teachers*

Internet access. All coursework, reading assignments, and lesson activities will be provided electronically via the World Wide Web; therefore, you must have a reliable connection and updated browser. (You can access the course from any web-based system!) Mozilla's Firefox is recommended and can be downloaded at no cost from <http://www.mozilla.com/en-US/firefox/>. Refer to the UTTC Technical Information page for currently supported browser versions: <http://www.uttc.org>.

Email account. Individual correspondence will be conducted via electronic mail; therefore, you must have a working email account that can send and receive attachments. UT-Dallas will create an account on enrolment; however, any other address may be used. Log into the TeleCampus Information System (TIS) at <https://tis.telecampus.utsystem.edu> to make changes to your username, password and email address. It is your responsibility to check for messages and to ensure that your TIS profile is accurate and complete!

Required Software. In addition to Internet access, you must have Microsoft Word and Microsoft PowerPoint (version XP for Windows or v. X for Mac, or later). See <http://www.utdtechstore.com> for discount details.

Also, you must have installed the latest releases – free downloads – of:

- PASCO's DataStudio Lite (see <http://www.pasco.com>),
- Apple's QuickTime Player (see <http://www.apple.com/quicktime/download>), and
- Adobe's Acrobat Reader (see <http://www.adobe.com/products/acrobat/>).

Suggested Readings/Texts

The Sciences: An Integrated Approach, 5th Edition

Trefil, James & Hazen, Robert M.
(ISBN 0-471-21963-0) John Wiley & Sons, Inc.
<http://he-cda.wiley.com>

Publication Manual of the American Psychological Association: Fifth Edition

American Psychological Association
(ISBN 1-55798-790-4) American Psychological Association
<http://www.apa.org/books/4200061.html>

Run the **UTTC Browser Checker** to make sure that your computer is ready for this semester! See <http://www.telecampus.utsystem.edu/forms/bcheck/browsercheck.html>

Assignments & Academic Calendar

The course will follow the official UTD academic semester schedule at www.utdallas.edu. Specific procedures and requirements for the content modules and/or projects are detailed in the course. The following outline is intended as a guide only and is subject to change as announced in the course.

In addition to the welcome, midterm, and final lessons, you must complete 6 content units. Each of the content units lasts 2 weeks and consists of a Texas map investigation, an electronic probeware laboratory, 2 lesson subtopics, a virtual field trip to a Texas State Park, and comprehensive evaluation components.

All units are available on course opening. Students self-select the unit order for their semester. Unit choices I, II, and III are addressed in the midterm exam; unit choices IV, V, and VI are addressed in the final exam.

Complete the following outline by inserting each of these unit topics once:

- Astronomy Historical Geology Meteorology
 Oceanography Physical Geology Structural Geology

<i>Week</i>	<i>Topic(s)</i>	<i>Open on</i>	<i>Due by</i>
01	Course Overview and Introductions	Jan 15	Jan 21
02-03	Unit <i>choice I</i> : _____	Jan 22	Feb 4
04-05	Unit <i>choice II</i> : _____	Jan 22	Feb 18
06-07	Unit <i>choice III</i> : _____	Jan 22	Mar 4
08	Midterm Review	Mar 5	Mar 18
09-10	Unit <i>choice IV</i> : _____	Jan 22	Apr 1
11-12	Unit <i>choice V</i> : _____	Jan 22	Apr 15
13-14	Unit <i>choice VI</i> : _____	Jan 22	Apr 29
15	Course Summary and Final	May 7	May 13

Course Policies

- Grading (credit)** Required for course completion (*Percentage of final course grade*)
- 10% Class Activities (Attendance, Communications, Participation, etc.)
 - 20% VTN Assignments (6 total)
 - 20% Project Quizzes (6 total)
 - 20% Unit Assessments (6 total)
 - 10% 'Big Picture' Discussion Postings (6 minimum)
 - 20% Course Exams (Midterm and Final)
- Make-up Exams** All assessments and assignments must be completed by the dates specified above unless prior arrangements are made with the instructor.
- Extra Credit** Not applicable; however, consideration will be given to overall class participation.
- Late Work** Typically, incomplete grades are not granted for MAT-SE online classes. Any assignments not submitted as required will be counted against a final grade and may result in a failing grade.
- If you are unable to complete a task on or before the scheduled due date, it is your responsibility to inform the instructor immediately. Incomplete grades may seriously impact your program studies.
- Special Assignments** None.
- Class Attendance** All lessons must be completed within the required timelines. Participation, e.g., discussions, group work, etc., counts toward your class activities grade.

Citizenship This is a professional setting; therefore, professional behavior is expected.

Off-Campus Instruction The UT TeleCampus provides a full complement of student resources, including a digital library, tutoring services, and a student handbook. Current details are available at <http://www.telecampus.utsystem.edu/learningresources.aspx>.

The UT TeleCampus has many technical support resources available to students, faculty and staff; see <http://www.telecampus.utsystem.edu/enrollmentservices.aspx>.

Immediate technical support is available 24 hours a day - 7 days a week - 365 days a year. Find out more about the help desk, including contact information, through the Help Desk link or by clicking on the Help button in the top frame of the UTTC portal.

1-866-321-2988 (toll-free) or see

<http://www.telecampus.utsystem.edu/technicalinformation/helpdesk.aspx>

If you are ever unable to get the help you need, please contact the UT TeleCampus staff Monday – Friday, 8:00 a.m. – 5:00 p.m. CST.

1-888-TEXAS-16 (toll-free) | uttctechsup@utsystem.edu

Student Conduct and Discipline The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of SafeAssign and TurnItIn, which searches the web for possible plagiarism and is over 90% effective.

Email Use	The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.
Withdrawal from Class	The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, the instructor cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.
Student Grievance Procedures	<p>Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's <i>Handbook of Operating Procedures</i>.</p> <p>In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.</p> <p>Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.</p>
Incomplete Grades	As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F .

Disability Services The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Off-Campus Instruction and Course Activities Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean.

These descriptions and timelines are subject to change at the discretion of the Professor.