



**Course** SCE 5303-0T1, **Lessons Learned by Leading Researchers in Science and Education**  
**Professor** Rebekah K. Nix, Ph.D.  
**Term** Summer, 2009  
**Meetings** UT-TeleCampus at <http://www.uttc.org>

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### Professor's Contact Information

**Office Phone** 972-883-2488  
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**Office Location** FN 3.218  
**Email Address** [rnix@utdallas.edu](mailto:rnix@utdallas.edu)  
**Office Hours** By appointment  
**Other Information** <http://www.utdallas.edu/~rnix>

### General Course Information

**Pre-requisites, Co-requisites, & other restrictions** 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* 4 hours per week for this study – 3 for reviewing the lessons and assignments, like reading articles and the bulletin board notes, plus 1 or more each week to work on the course team assignments and projects.

**Course Description** This course explores the topics of learning environments, experimental creativity, and research awareness to stimulate new ways for approaching science and education. Video clips from the Center for Science Education Research's Seminars for Lifelong Learners provide a springboard for discussion and interactive team collaboration. (3 graduate semester credit hours)

Meeting or exceeding the UTTC 'Principles of Good Practice', a student-centered approach promotes high expectations for coursework and academic performance. Established on a solid foundation of scientific research and academic excellence, this course specifically supports the MAT-SE online program goal to produce students who are able to use and contribute to current educational research and methodology.

- Learning Outcomes**
1. The student will be able to understand and evaluate the pedagogical soundness of original and alternative pathways for integrating science content.
  2. The student will be able to recognize and justify strategies for improving educational practice within their individual field of expertise.
  3. The student will be able to contribute to the science education community of their peers by sharing ideas for enhancing teaching and learning with the instructor, team members, and classmates, and professionals.

**Texts, Readings, & Materials**

*Required Texts*

None required.

*Technical Requirements and Support*

Before you begin - and as needed throughout - your coursework, become familiar with and use the links on the UTTC Technical Support page at <http://www.uttc.org> to check the following:

Computer Requirements. Minimum hardware requirements and recommended software configurations

Browser Configuration. Step-by-step instructions for configuring your web browser, security settings and plug-ins

Tools. Tools and resources for checking your browser settings, network connectivity and more...

Getting Help. Contact information for live 24 x 7 x 365 technical support

Technical Support FAQs. Answers to frequently asked technical support questions.

*Required Materials*

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/>.

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 <http://www.telecampus.utsystem.edu/enrollmentservices/tisaccess.aspx> 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, Microsoft PowerPoint, and Microsoft Excel (version XP for Windows or v. X for Mac). Teachers and UTD students are eligible for discounts (see <http://www.utdtechstore.com>).

Also, you must have installed the latest releases of Apple's QuickTime Player (see <http://www.apple.com/quicktime/download>) and Adobe's Acrobat Reader (see <http://www.adobe.com/products/acrobat/readstep2.html>) – free downloads!

*Suggested Readings/Texts*

The Tipping Point: How Little Things Can Make a Big Difference  
by Malcolm Gladwell

Softcover, 301 pages (Hardcover, paperback, and audio available!)  
©2002, ISBN 0316346624 (pbk.)

*Suggested Materials*

Optional Tools. It is strongly recommended that you have installed and regularly update an online virus scan utility on your system. It is your responsibility to save your work and make backups!

## Assignments & Academic Calendar

The course will follow the official UTD academic semester schedule at <http://www.utdallas.edu>. Specific 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.

<i>Week</i>	<i>Topic(s)</i>	<i>Open on</i>	<i>Due by</i>
1	Conceptual Framework: Creating an Integrated Science Learning Environment (ISLE) <input type="checkbox"/> Review Syllabus <input type="checkbox"/> Familiarize yourself with UT TeleCampus site <input type="checkbox"/> Complete <u>Assessment 01 Student Responsibility Agreement</u>	June 8	June 14
2	Seminar: <b>International Learning Environments Research in Science Education, Professor Barry J. Fraser</b> <input type="checkbox"/> Read <i>LER</i> Article <input type="checkbox"/> Watch Fraser Presentation video clips <input type="checkbox"/> Complete <u>Assessment 02 Fraser Seminar and LER Article</u> <input type="checkbox"/> Post Fraser thoughts on appropriate discussion board <input type="checkbox"/> Complete <u>Workgroup Part 1: MAN GEMweb2</u> <input type="checkbox"/> Work on MAN Project item	June 15	June 21
3	Exploration: Constructivist Learning Environments <input type="checkbox"/> Complete <u>Assignment 03 Tipping Point: Constructivist Learning Environment</u> (Submit a 300-500 word document) <input type="checkbox"/> Complete <u>Workgroup Part 2: MAN GEMweb2</u> <input type="checkbox"/> Complete/Submit <u>MAN Project Item</u>	June 22	June 28
4	Seminar: <b>Science, from Nobel to Neighborhoods, Dr. Russell Hulse</b> <input type="checkbox"/> Read/watch Hulse presentation materials <input type="checkbox"/> Complete <u>Assessment 04 Hulse Seminar and Related Documents</u> <input type="checkbox"/> Post Hulse thoughts on appropriate discussion board <input type="checkbox"/> Complete <u>Workgroup Part 1: GEO GEMweb2</u> <input type="checkbox"/> Work on GEO Project item	June 29	July 5
5	Exploration: Values Education within Science Education <input type="checkbox"/> Submit <u>Assignment 05 Tipping Point: A Scientifically-Literate Citizenry</u> (Submit a 300-500 word document) <input type="checkbox"/> Complete <u>Workgroup Part 2: GEO GEMweb2</u> <input type="checkbox"/> Complete/Submit <u>GEO Project item</u>	July 6	July 12

6	Seminar: <b>Plastics That Conduct Electricity – From Chemistry to Nanotechnology, Dr. Alan MacDiarmid</b> <input type="checkbox"/> Read/watch MacDiarmid presentation materials <input type="checkbox"/> Complete <u>Assessment 06 MacDiarmid Seminar and Related Texts</u> <input type="checkbox"/> Post MacDiarmid thoughts on appropriate discussion board <input type="checkbox"/> Complete <u>Workgroup Part 1: ECO GEMweb2</u> <input type="checkbox"/> Work on ECO Project item	July 13	July 19
7	Exploration: Scientific Creativity <input type="checkbox"/> Submit <u>Assignment 07 Tipping Point: Scientific Inquiry</u> <input type="checkbox"/> Complete <u>Workgroup Part 2: ECO GEMweb2</u> <input type="checkbox"/> Complete/Submit <u>ECO Project item</u>	July 20	July 26
8	Logistical Frameworks: Evaluating an Integrated Science Learning Environment (ISLE) <input type="checkbox"/> Complete/Submit <u>08 UTD (and UTTC) End-of-Course Surveys</u>	July 27	Aug 2
<b>FINALS</b>	Review course materials and peer discussion postings	Aug 3	Aug 9

ALL 3 FINAL G, E, M **PROJECTS** ARE DUE **BY NOON CST ON AUGUST 3, 2008**

### Course Policies

- Grading (credit)** Final grades will be determined as follows:
- 20% = Assessments (4 total)
  - 20% = Assignments (4 total)
  - 30% = Project Items (3 total)
  - 20% = Workgroup Discussion Entries (12 minimum)
    - 5 pts = substantive contribution; 3 pts = basic comments;
    - 0 = inappropriate/no postings
  - 10% = Participation (Class Discussions and Instructor Email)
- Extra Credit** Not applicable.
- Late Work** Accepted for scoring by the end of the *next* week with a grade reduction; all grading (credit) items must be completed *before* the course end to receive a passing grade.
- Special Assignments** None. We will use the discussion board function regularly for required communications with the class and within your workgroup. You are advised to review the Discussion Board Tutorial available within the course.
- Class Attendance** Mandatory; in order to receive a passing grade for this course, each student must:
- Complete and submit 4 assessments
  - Complete and submit 4 assignments
  - Complete and submit 3 projects
  - Submit at least 12 workgroup discussion board entries
  - Complete and submit UTD and UTTC course surveys
- Citizenship** Participation expected, e.g., discussions, group work, etc.

**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)

**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 may use the resources of 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.

This course will follow the *Netiquette Guidelines* at <http://www.albury.net.au/new-users/rfc1855.txt>; this is the full text of RFC 1855, which is the unofficial standard work on electronic etiquette.

**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** Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

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.

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.

**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 with 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](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.*

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