History 329U: **Perspectives on Science and Math**  
11-11:50 AM, and 3:00-3:50 PM, in classroom 4.18 PAI  
unique # 39475 and # 39480

Professor: **Alberto Martinez, Ph.D.**  
Teaching Assistant: Andrew Wilkins  
History Dept. / UTeach Natural Sciences  
Office: Garrison Hall, GAR 0.138  
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Discussion Sessions in PAI 4.18: M 12:00-12:50pm, M 4:00-4:50 pm

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This course explores episodes in the history of science and math. It has four goals: to give an overview of the history of science and math (for general education and to better comprehend subjects you may eventually teach); to enable you to put these historical perspectives and context to work in pedagogy; to sharpen your independence of thought; and to improve your writing skills.

Students will design and revise a **5E Lesson Plan** (having a minimum length of 2000 words). Detailed instructions will be distributed separately. You will choose the subject of these lesson plans from a variety of options. Once graded, you will incorporate corrections into your lesson plan, to share the revised version, which will improve your grade. There will be several quizzes and writing assignments. All students will take two **Exams**, designed to test the extent to which you have followed, engaged, and learned from the topics discussed in class and in the readings. Furthermore, you will have to do a **Presentation** of one of your lesson plans to a group of peers. You will also write Comments on other presentations.

**NOTE:** this course involves a weekly **Discussion Session** with the Teaching Assistant from the History Department. You’re required to attend one such session per week, to carry out work for the course.

This is an upper-division history course. The assigned readings vary in length, and we encourage you to read thoughtfully rather than skimming and forgetting. Some of the readings will be from primary sources (such as writings by prominent scientists), other readings will be from secondary texts (such as by historians). You will also be required to do additional research and reading for the lesson plans; so keep this in mind when budgeting your time for this course. Classes will be conducted as a mixture of lecture and discussion. Accordingly, attendance and participation are important, as you can also see from the grading distributions below. Attendance will be taken daily, and will be used in evaluating your overall grade for class participation. Do speak up!

**READINGS:** There are two required books, available at the Co-Op and elsewhere:  
Additional readings will be posted online, on http://canvas.utexas.edu/. You’re responsible for doing each reading assignment on time. On any day when there’s an assigned reading, there may be a Reading Confirmation Quiz. The Class Calendar, below, lists the exact day when each reading will be discussed. The Class Calendar includes also a reliable schedule of when specific subjects will be covered in class. It also includes project due dates, and the Exam dates.

**GRADING:** This course has a Writing Flag; therefore, much of your final grade will be based on written work. Final Grading Scale: 100-93 = A, 92-90 = A-, 89-87 = B+, 86-83 = B, 82-80 = B-, 79-77 = C+, 76-73 = C, 72-70 = C-, 69-67 = D+, 66-63 = D, 62-60 = D-, 59-0 = F

The grading breakdown is as follows:

- 15% Class participation (for speaking; minus absences, see below)
- 10% Quizzes and Assignments
- 15% Lesson Plan
- 15% Exam 1 (in class)
- 15% Revised Lesson Plan
- 15% Presentation
- 15% Exam 2 (in class)

**Pass/Fail:** Students who enroll in the course in the Pass/Fail option are still required to complete all Assignments, Lesson Plans, Presentations, and Exams. Otherwise, you may Fail the course.

**ATTENDANCE:** everyone should attend classes and discussion sessions. There will be sign-in sheets. You have one free absence-without-consequences. After that, you must provide written evidence of illness, or another acceptable exemption, otherwise, each absence costs 0.5 percentage points from your Final Course Grade. Perfect attendance earns you a +0.5 Bonus (for no absences at all).

**Accommodations:** Anyone with a disability needing accommodations should contact Services for Students with Disabilities (SSD) at (512) 471-6259. http://diversity.utexas.edu/disability/current-students/

Please don’t email your work, unless requested. Turn it in on paper. Work turned in late without an extension granted in advance will be penalized by one full letter grade.

This is a Writing Flag course. We will write regularly, complete substantial writing projects, and receive feedback to help you revise your writing. You will also read and discuss your peers’ work. For more information on Writing Flag courses, see https://ugs.utexas.edu/flags/students/about/writing. I also encourage you to benefit from the Undergraduate Writing Center: http://uwc.utexas.edu/

Here are Frequently Asked Questions for the Writing Center: http://uwc.utexas.edu/faq/

Don’t plagiarize! You’re required to read “Avoiding Plagiarism in History Courses,” here: http://liberalarts.utexas.edu/history/about/academic-integrity.php University policies on plagiarism and academic dishonesty will be enforced in this class. You can fail the course if you plagiarize.

**Religious holidays:** By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an exam, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.
**History 329U: Perspectives on Science and Math**

**Class Calendar, Fall 2017**

* **ASSIGNED READINGS**
  
  **Books:**  
  CP = *Cult of Pythagoras*, SS = *Science Secrets*

  Aug.30 Wed. Intro, and What is a Science anyway?
  Sept.1 Fri. Lightning “Ben Franklin’s electric kite” SS 118-127
  Sept.4 Mon Labor Day – no class
  Sept.6 Wed. Falling bodies “Galileo and the Leaning Tower” SS 1-12
  Sept.8 Fri. Pythagoras “Triangle sacrifice to the gods” CP 1-15
  Sept.11 Mon. Irrational numbers “An irrational murder at sea” CP 16-28
  Sept.13 Wed. Plato’s Philosophy of Math “Ugly Socrates on Eternal Truth” (math) CP 29-42
  Sept.15 Fri. 5-E lesson: Species and Monsters
  Sept.18 Mon. Alchemy and gold “The Stone of the ancients” SS 70-85
  Sept.22 Fri. 5E Lesson: Imaginary Numbers
  Sept.25 Mon. Darwin at the Galápagos “What is a species?” on Canvas
  Sept.27 Wed. Controversies over Evolution “Darwin’s missing frogs” SS 95-117
  **Sept.29 Fri. EXAM (in class)**

  Oct.2 Mon. expansion day
  Oct.4 Wed. Myths in math “Gauss, Galois, and the Golden Ratio” CP 59-81
  Oct.6 Fri. Paradoxes of division “From Nothing to Infinity” CP 82-100

  **Oct. 9 Mon. Mathematical Psychology of Prisoners’ Dilemmas **  
  **FIRST LESSON PLAN DUE**
  Oct.11 Wed. Paradoxes in the Calculus “The war over the Infinitely Small” CP 134-155
  Oct.16 Mon. Geologists and Biologists versus Physicists “Age of the Earth,” on Canvas
  Oct.20 Fri. Mendel, the misinterpreted priest “Mendel,” on Canvas

  Oct.23 Mon. Class Presentation
  Oct.25 Wed. Improbable Statistics of TV game shows (UTeach Workshop)
  Oct.27 Fri. Class Presentation
Oct.30 Mon. Class Presentation
Nov.1 Wed. Revolution: Continental Drift “Wegener versus everyone,” on Canvas
Nov.3 Fri. Class Presentation

Nov.6 Mon. Class Presentation
Nov.8 Wed. Good dogs and bad dogs “Early Canid Domestication,” on Canvas
Nov.10 Fri. Class Presentation

Nov.13 Mon. Class Presentation
Nov.15 Wed. Einstein and Relativity “A Myth about the Speed of Light” SS 172-192
Nov.17 Fri. Class Presentation

Nov.20 Mon. Class Presentation
Nov.22 Wed. *No class: Thanksgiving break*
Nov.24 Fri. *No class: Thanksgiving break*

**Nov.27 Mon. EXAM (in class)**
Nov.29 Wed. Impossible geometry? “Impossible Triangles” *CP 156-180*
Dec.1 Fri. Philosophies of Mathematics “Inventing Mathematics?” *CP 181-200*

Dec.4 Mon. Class Presentation
Dec.6 Wed. Biology and Ideology “Eugenics and the myth of equality” *SS 229-246*
Dec.8 Fri. Class Presentation

**Dec.11 Mon. Last Class Revised Lesson Plan due.**

**Student Rights & Responsibilities:**
- You have a right to a learning environment that supports mental and physical wellness.
- You have a right to respect.
- You have a right to be assessed and graded fairly.
- You have a right to freedom of opinion and expression.
- You have a right to privacy and confidentiality.
- You have a right to meaningful and equal participation, to self-organize groups to improve your learning environment.
- You have a right to learn in an environment that welcomes all people. No student shall be isolated, excluded or diminished in any way.

**With these rights come responsibilities:**
- You are responsible for taking care of yourself, managing your time, and communicating with the teaching team and with others if things start to feel out of control or overwhelming.
- You are responsible for acting in a way that is worthy of respect and always respectful of others.
• Your experience with this course is directly related to the quality of the energy that you bring to it, and your energy shapes the quality of your peers’ experiences.
• You are responsible for creating an inclusive environment; for speaking up when someone is excluded.
• You are responsible for holding yourself accountable to these standards, holding each other to these standards, and holding the teaching team accountable as well.

Personal Pronoun Preference: Class rosters provide the students’ legal names. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

University Policies – Academic Integrity Each student is expected to abide by the University of Texas Honor Code: “As a student of The University of Texas at Austin, I shall abide by the core values of the University and uphold academic integrity.” Plagiarism is taken very seriously at UT. Therefore, if you use words or ideas that are not your own (or that you have used in previous class), you must cite your sources. Otherwise you will be guilty of plagiarism and subject to academic disciplinary action, including failure of the course. You are responsible for understanding UT’s Academic Honesty and the University Honor Code at the following web address: http://deanofstudents.utexas.edu/sjs/acint_student.php

Policy on Academic Integrity: Students who violate University rules on academic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on academic dishonesty will be strictly enforced. For further information, please visit the Student Conduct and Academic Integrity website at: http://deanofstudents.utexas.edu/conduct.

Q Drop Policy: If you want to drop a class after the 12th class day, you’ll need to execute a Q drop before the Q-drop deadline, which typically occurs near the middle of the semester. Under Texas law, you are only allowed six Q drops while you are in college at any public Texas institution. For more information, see: http://www.utexas.edu/ugs/csacc/academic/adddrop/qdrop

University Resources for Students: Your success in this class is important to me. We will all need accommodations because we all learn differently. If there are aspects of this course that prevent you from learning or exclude you, please let me know as soon as possible. Together we’ll develop strategies to meet both your needs and the requirements of the course. There are also a range of resources on campus:

Services for Students with Disabilities: This class respects and welcomes students of all backgrounds, identities, and abilities. If there are circumstances that make our learning environment and activities difficult, if you have medical information that you need to share with me, or if you need specific arrangements in case the building needs to be evacuated, please let me know. I am committed to creating an effective learning environment for all students, but I can only do so if you discuss your needs with me as early as possible. I promise to maintain the confidentiality of these discussions. If appropriate, also contact Services for Students with Disabilities, 512-471-6259 (voice) or 1-866-329-3986 (video phone). http://ddce.utexas.edu/disability/about/

Counseling and Mental Health Center: Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. You’re not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful. If you or anyone you know experiences any academic stress, difficult life events, or
feelings like anxiety or depression, we strongly encourage you to seek support.
http://www.cmhc.utexas.edu/individualcounseling.html

**The Sanger Learning Center:** More than 33% of UT undergraduate students use the Sanger Learning Center each year to improve their academic performance. All students are welcome to take advantage of Sanger Center’s classes and workshops, private learning specialist appointments, peer academic coaching, and tutoring for more than 70 courses in 15 different subject areas. For more information, please visit http://www.utexas.edu/ugs/slc or call 512-471-3614 (JES A332).

Student Emergency Services: http://deanofstudents.utexas.edu/emergency/

**Religious Holy Days:** Religious holy days sometimes conflict with class and examination schedules. Sections 51.911 of the Texas Education Code address absences by students for religious holy days. Section 51.911 states that a student shall be excused from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence. University policy required students to notify each of their instructors as far in advance of the absence as possible so that arrangements can be made.

**Important Safety Information:** If you have concerns about the safety or behavior of fellow students, TAs or Professors, call BCAL (the Behavior Concerns Advice Line): 512-232-5050. Your call can be anonymous. If something doesn’t feel right – it probably isn’t. Trust your instincts and share your concerns. The following recommendations regarding emergency evacuation from the Office of Campus Safety and Security, 512-471-5767, http://www.utexas.edu/safety/ Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.
• Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.
• Students requiring evacuation assistance shall inform the instructor in writing in the first week of class.
• In the event of an evacuation, follow the instruction of faculty or class instructors. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.
• Link to information regarding emergency evacuation routes and emergency procedures can be found at: http://www.utexas.edu/emergency