Tentative Syllabus: Professor Vince Cronin's Section of Geology 3445
Introduction to Structural Geology

Professor Cronin reserves the right to revise this syllabus as necessary throughout the semester. Notice of revision will generally be given during one or more lecture meetings, or via email broadcast to registered students in the course.

Important note: This syllabus is not a contract.

The lecture section of this course meets Monday-Wednesday-Friday from 11:15 AM until 12:05 PM in Baylor Science Building (BSB), room E-414, and the lab meets on Tuesdays in the same room from 2:00 until 4:45 PM. Labs begin on September 1. Weather/heat permitting, we might spend some of these lab sessions in the field.

This lecture section is taught by Professor Vince Cronin, Ph.D.
Lab/Office: BSB E441 . . . . . Telephone: (254) 710-2174
Office hours: MWF 9:55-11:00 AM, or by appointment
email: Vince_Cronin@baylor.edu

All email communication to Professor Cronin concerning this course must originate from your Baylor email account.

Purpose Of This Course

This is an introductory survey course in structural geology, *intended for undergraduate students who aspire to develop into practicing geoscientists*. It is important for undergraduate geoscientists to acquire *and retain* knowledge of structural geology.

Students in this course are expected to study (*i.e.,* not just skim) the assigned material, which should require no less than ~6-8 hours of concentrated work outside of class/lab each week. If you are not willing to devote that amount of time to this course, you will not learn the material and, hence, there is little point in your taking this course. You need to commit to doing good work and learning the course material, or consider choosing a different and less intellectually taxing major.

Required Books

Required Lecture-Section Textbook: Fossen, 2010, **Structural Geology**: Cambridge University Press, ISBN 978-0-521-51664-8, 463 p. Online resources for this book are available at http://www.cambridge.org/us/academic/subjects/earth-and-environmental-science/structural-geology-tectonics-and-geodynamics/structural-geology?format=HB

The labs will be run using a combination of home-brewed exercises supplemented by material from Rick Allmendinger's structural lab book (http://www.geo.cornell.edu/geology/faculty/RWA/structure-lab-manual/).

Course Homepage and Grade Access

The homepage for this course is http://croninprojects.org/Vince/Course/IntroStructGeol/index.htm.

Grades for in-class exams and in-class activities for this course are mainly accessed online via Canvas.
To get to Canvas (which is a "learning management system" used by Baylor), start at the Baylor homepage http://www.baylor.edu/, select the **STUDENTS** link on the left of the screen, choose **Online Tools** on the left side of the subsequent screen, and then choose **Canvas**. This will link you to a login page for Canvas. After logging in with your Baylor ID and password, choose the 201530 GEO 3445 01 - Structural Geology course.

Approximate Lecture Schedule

In addition to the university holidays this semester (Labor Day, Fall Break, Thanksgiving), there will be no class in the lecture section of this course on the following days because Professor Cronin will be out of town.

- September 18 (travel to Chicago)
- October 7-8 (West Texas Geological Society Meeting, Midland)
- November 2-6 (GSA Annual Meeting, Baltimore; NSF)

Dates	No. Days	Topics	Required Prior Studying in Fossen (2010)	Anticipated Quiz Date
Aug 24-28	3	Introduction & whole-Earth structure	chapter 1	Aug 31
Aug 31-Sept 4	3	Deformation & strain	chapter 2	Sept 9
Sept 9-11	2	Finite strain	chapter 3	Sept 14
Sept 14	5	Stress	chapters 4 & 5	Sept 25
Sept 25-28	2	Rheology	chapter 6	Sept 30
Sept 30-Oct 9	4	Brittle deformation	chapter 7	Oct 12
Oct 12-21	5	Faults	chapters 8-9	Oct 23
Oct 23-Nov 9	4	Deformation mechanisms	chapter 10	Nov 11
Nov 11-16	3	Folds	chapter 11	Nov 18
Oct 25-28	2	Foliation & cleavage	chapter 12	Nov 23
Nov 2-6	3	**No Class -- GSA Meeting**	read a good book	

Nov 23-30	2	Shear zones & mylonite	chapter 15	Dec 2
Dec 2	1	Contractional deformation	chapter 16	on final exam
Dec 4	1	Extensional deformation	chapter 17	on final exam
Dec 7	1	Recap/Summary	all	on final

About Quizzes

The first quiz on August 31, and concerns whole-Earth structure.
All other quizzes are scheduled to occur at the beginning of class, on the class day following the end of a given topic. Except for valid University excuses ***with written documentation*** (e.g., illness, bereavement, athletic, performance), ***there will be no make-up or re-take quizzes this semester.*** All make-up quizzes will be administered within one week (or within 3 class meetings) of the original quiz unless other arrangements are made with Dr. Cronin within 3 days of the original exam. No quizzes will be administered early.

Material on lecture quizzes will be drawn from the assigned textbook chapter. Students are responsible for having read all of the assigned chapters in the lecture and lab books. You should assume that every exam is cumulative in nature, so anything from earlier in the course might be part of a subsequent quiz.

About Lab

- **The Laboratory Is A Required Part Of This Course.** Lab begins on September 1, and take place in our usual meeting room, E-414.
- Your attendance at each lab session is **mandatory**, and *there are no make-up labs*. **Students who miss more than 25% of the scheduled lab meetings will receive a grade of "F" for the entire course.**
- ***All labs are two hours and 45 minutes long,*** so do not plan anything until after the lab is scheduled to be over.
- A pre-lab series of questions will be asked, for which no preparation is necessary.
- A post-lab series of questions will be asked to determine what was learned during lab.
  Unless otherwise specified, all laboratory assignments are due at the beginning of the lecture class on the first Friday that follows the corresponding lab (or on the first Monday, if Friday is a holiday). So, for example, the assignment for the first lab is due on Friday, September 4. **15% will be deducted for assignments turned in late.** ***No assignments in this course will be accepted more than one week after its due date.***
- Additional information about the lab will be posted via the course home page (http://croninprojects.org/Vince/Course/IntroStructGeol/index.htm)

Approximate Lab Schedule

Dates	Topic	Required Prior Studying
Aug 24-28	**No Labs The First Week**	--
Sept 1	Introduction, 1-D strain, vectors, coding	handouts in lab
Sept 8	Matrices, simple programming, strike, dip, rake, bearing	handouts
Sept 15	Spatial data, contouring, structure contours	handouts
Sept 22	Geologic maps and simple cross sections; plasticine models	handouts
Sept 29	Ground-surface traces from structure contours	handouts
Oct 6	Physical models of deformation	handouts
Oct 13	Introduction to GPS Strain	handouts
Oct 20	GPS Strain Results	--
Oct 27	**GPS Strain Student Presentations**	--
Nov 2-6	**No Labs -- GSA Meeting**	read a good book
Nov 10	to be decided	--
Nov 17	to be decided	--
Nov 24	to be decided	--
Dec 1	to be decided	--

Support Items To Be Supplied By You (The Student)

You must bring all supplies necessary to complete the lab assignments. **Failure to bring the necessary materials to lab will result in a reduction to your final grade, because being prepared to learn is essential for success.**. You will need:

1. A rudimentary scientific calculator with trigonometric functions ($10-$15)
2. Access to a computer outside of the classroom for word processing, spreadsheet computations, Web surfing, and emailing text with attachments
3. A field notebook (recommended: Rite in the Rain Geological Field Book No. 540 F, www.RiteintheRain.com)
4. One or more 3-ring binder(s) for 8.5x11" paper, for handouts and other paper stuff
5. Other laboratory supplies as appropriate, including tracing paper, a ruler with metric divisions, a protractor, a pencil and eraser
6. Appropriate personal equipment during field work, including but not limited to clothing appropriate to the weather, a hat appropriate to the conditions, footwear appropriate for field work, sufficient water to keep you hydrated, something to write with, a protractor, a ruler or small tape

measure, sun screen or bug repellant if appropriate, and so on.

Some Rules, Practices, Pronouncements, Pontifications, Disclaimers, Understandings

- You (the student) are responsible for learning all of the material in the required reading, whether or not it is specifically discussed in lecture or lab.
- Your attendance at every lecture session is expected. By college policy, you must attend no less than 75% of the lectures in this class. In order to be considered "present" for purposes of this rule, you must be present for the entire lecture session. **Students who do not attend at least 75% of the lectures will receive a grade of "F" for the course.**
- Your attendance at every lecture session is expected. By college policy, you must attend no less than 75% of the labs in this class. In order to be considered "present" for purposes of this rule, you must be present for the entire lab session. **Students who do not attend at least 75% of the labs will receive a grade of "F" for the course.**
- Cell phones, pagers, audio/video recorders, text-messaging devices, audio players (*e.g.,* iPods...), cameras, laptop computers, tablet computers and other recording, communication or keyboarding devices must be turned off and put away during all exams. Their use at other times might be allowed, at the discretion of Dr. Cronin. Courtesy and common sense dictate that they should not be used if they are a distraction to any other member of the class. So that there is no misunderstanding, Facebook and Twitter and other social media apps/sites are preemptively defined as a distraction during class.
  Professor Cronin does not give permission for any audio or video recording of his classroom communications.
- ***Your safety in every activity related to this course, including all aspects of every trip into the field, is your responsibility alone.***
- Email correspondence with Dr. Cronin in this course should originate **from your Baylor email account** and not from other personal email accounts you may have. Dr. Cronin will direct all email correspondence to you at your Baylor email account, so you should check it frequently.
- It is assumed that students in this course meet or exceed the national standards for high-school mathematics (http://standards.nctm.org/).
- You must turn off all electronic communication/recording devices during lecture and laboratory sessions, including exams.
- Neatness and organization are recognized valid grading criteria, particularly in laboratory exercises such as drawing maps and cross sections.
- Use of standard English is a recognized valid grading criterion in all exams, reports and other graded exercises in this course. That is, your grade will be adversely impacted by incorrect or ineffective use of standard English.
- Dr. Cronin reserves the right to send any student home from a field trip, or from a class/lab session, for behavior that is disruptive or that threatens safety. Examples of disruptive behavior during a class or lab session include falling asleep, and engaging in activities that are unrelated to current course work in structural geology (*e.g.,* work related to another course, reading the paper, listening to a personal audio device, and so on).
- In accordance with university policy, there will be no alcohol usage on field trips in this course, and no smoking is allowed in the classroom or in vehicles used for the field trips. Collegiality is important in this course.
- The work that you hand-in for credit must be entirely your own work, unless otherwise indicated by Dr. Cronin. Truth and trustworthiness are essential characteristics of scientists (and of good people in general).
- Maps, models, specimens, instruments, and other non-expendable materials that are made available to you during lectures and labs are to be treated with care and respect.
- The Killer Rabbit of Caerbannog has very long, sharp teethies.

Final Course Grade

It is a little bit difficult to specify how grades will be determined this semester, because the course will simply be different than in the past. It is fair to say that the grades will be based on a mix of traditional exams, projects, participation in lecture and lab, and effectiveness of your preparation (reading and study) outside of class.

- Oral exams might be given to augment the written exams. While the topics covered in the corresponding written exam will be emphasized, any previous coursework (including the contents of assigned reading and labs) is fair game.
- Written assignments and oral presentations will be graded based on content, language (use of standard English), legibility, style and presentation. Correct use of standard English is a grading criterion in all elements of this course.

If you do not attend at least 75% of the lecture meeetings and at least 75% of the lab meetings, the final course will be an F, in accordance with University standards.

The final exam is scheduled for Saturday, December 12, 2:00-4:00 PM in our regular classroom (BSB E-414). You cannot take the final exam early, so don't schedule that fabulous ski vacation in Grenoble or Igls for anytime before December 13.
It is not easy to receive a grade of A in this course. It is *not* just a matter of showing up and doing a reasonable job on exams. **To receive a grade of A in this course, a student must consistently display a mastery of the assigned material** as judged by Dr. Cronin.
Students who want to do an undergraduate thesis/research project with Dr. Cronin must earn a grade of A- or better in this course.

Academic Integrity

Academic integrity refers to the "integral" quality of the search for knowledge that a student undertakes. The work a student produces, therefore, ought to be wholly his or hers; it should result completely from the student's own efforts. A student will be guilty of violating academic integrity if he/she...
(a) knowingly represents work of others as his/her own,
(b) uses or obtains unauthorized assistance in the execution of any academic work, *including* possessing or using a stolen copy of one of Professor Cronin's exams, or
(c) gives fraudulent assistance to another student.
After McGlynn, A.P., 2001

In the spirit of being a good steward of university resources, you must be careful not to abuse samples, maps, models, reserve materials, or other resources provided for your use in this course.

Students agree that by taking this course, all required papers, exams, class projects or other assignments submitted for credit may be submitted to turnitin.com or similar third parties to review and evaluate for originality and intellectual integrity. A description of the services, terms and conditions of use and privacy policy of turnitin.com is available on its web site: http://www.turnitin.com. Students understand all work submitted to turnitin.com will be added to its database of papers. Students further understand that if the results of such a review support an allegation of academic dishonesty, the course work in question as well as any supporting materials may be submitted to the Honor Council for investigation and further action.

For answers to frequently asked questions about geology and science, go to http://www.baylor.edu/Geology/index.php?id=61728
