Introduction to Physical Geology Laboratory

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Office: Room 307, Miller Science Building
Office Hours: As this is a web-based course, office hours will be offered electronically.

LabPaq Kit

Every student enrolled in this online course is required to purchase a LabPaq kit from HOL (Hands-On Labs). These kits will be used weekly for mineral and rock content and quizzes and for monthly lab practical exams. They will aid in learning the physical properties of minerals and rocks and in their identification. Order these kits now so that they will be available when you begin the course content. Ordering information is listed below.

Hands-On Labs Student Ordering Instructions:

- Go To: http://www.holscience.com
- Click: “Order Here”
- Log In: C000732
- Password: labpaq
- Under GENERAL LAB SUPPLIES: Click on Geology
- Add to Cart these 2 items:
  - 10-0035-00-01 Rock Set, Variety (49 pcs)
  - 21-0145-00-01 Assy, Mineral Identification

Program Learning Outcomes

1. Demonstrate knowledge of the fundamental core geologic concepts (Mineralogy, Petrology, Structural Geology, Stratigraphy, Geophysics and Geochemistry). (Concepts)
2. Execute geologic procedures and methods accurately, appropriately and efficiently. (Skills)
3. Apply principles of logic and reasoning to develop and analyze geologic problems. (Logical Reasoning)
4. Demonstrate competence in using various geologic tools, including technology, to formulate, represent, and solve problems. (Critical thinking - Problem Solving)
5. Demonstrate proficiency in communicating geologic information in an appropriate form to the expected audience. (Communication)

General Education Core Curriculum Objectives/Outcomes:
The Texas Higher Education Coordinating Board has identified six core learning objectives: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these six objectives. By enrolling in GOL 101 Fundamentals of Earth Science, you are also enrolling in a Core Curriculum Course that seeks to develop the following core objectives established by the THECB:

- Critical Thinking Skills – creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
Communication Skills – effective development, interpretation and expression of ideas through written, oral and visual communication.

Empirical and Quantitative Skills – manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Teamwork – the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Student Learning Outcomes

1. Understand minerals and their physical properties.
2. Gain an understanding of rocks and how they form.
3. Study the morphological features that external forces form on the Earth’s surface.

Text and Materials

Optional: No lab manual is required because there are no lab assignments (other than Worksheets), but the manuals listed below are excellent (any edition). Many Laboratory Manuals for Physical Geology are offered for purchase online, and any of them could be beneficial. However, purchase of a lab manual is optional and not a requirement because this course provides pertinent information. You will have an opportunity to interact and exchange (mineral identification /rock identification/topographic map) information with your classmates.

- Laboratory Manual in Physical Geology, AGI American Geological Institute
- Laboratory Manual in Physical Geology, Tasa
- Laboratory Manual for Physical Geology, Charles Jones, Norris Jones
- Laboratory Manual for Introductory Geology, Ludman and Marshak
- Laboratory Manual for Geology 131 General Geology, SFASU Dept of Geology

To aid your efforts at studying for the mineral and rock exams, I have created mineral and rock flashcards that have been formatted to fit on 3x5 inch index cards offered by Avery (product number 3588). These blank index cards can be found at office supply stores such as Office Depot, Office Max, or Staples. You can also order them here: http://www.avery.com/avery/en_us/Products/Cards/Index-Cards/. Some prior students elected to print the flashcards on 8.5x11 inch standard paper, so the choice is yours.

First Aid Information

- Dilute hydrochloric acid (3%) will be used in this lab to assist in mineral and rock identification.
- Eye Contact: If hydrochloric acid contacts your eye(s), flush eyes with plenty of running water and continue for at least 15 minutes. Get medical attention if irritation persists.
- Skin Contact: If hydrochloric acid contacts your skin, flush affected skin area with water. Wash with soap and water. If irritation occurs, consult a physician.
Grading and Evaluation

Grades are determined from a variety of assignments:

- Examinations: 3 @100 points (300 points total)
- Quizzes: 10 highest out of 11 given @10 points (100 points total)
- Worksheets: 5 highest out of 6 given @10 points (50 points total)
- Field Project: Optional 1 @50 points (50 points total)

TOTAL = 450 pts

Grades will break down as follows:

A = 405-450
B = 360-404
C = 315-359
D = 270-314
F = 269 and below

It is your responsibility to keep up with your grades, and they can always be viewed (Grades in Navigation bar). The Field Project is optional and only used as extra credit in lab. Thus, you are not penalized if you elect not to submit it. Guidelines for this project are listed in the Gol 131L Syllabus.

The laboratory is a separate 1-hour credit, and lecture is a separate 3-hour credit. However, they are co-requisites (meaning the initial attempt requires simultaneous enrollment). You must pass both (≥ 60 average) to receive credit for a laboratory science. For example, if you have an 85 average in lecture, you would receive the grade "B" for completion of the 3-hour lecture portion. However, if you have a 55 average in lab, you would receive the grade "F" for non-completion of the required 1-hour lab. University requirements are that both (lab and lecture) be successfully completed. Check the requirements of your College to determine if you should repeat only the portion that was failed or both portions (lab and lecture).

If you want to determine your lab average at any point in the semester or your final lab average, follow these instructions:

- **Current** lab average:
  - Get Started Quiz is not included.
  - add completed quiz grade(s), worksheet grade(s), and exam grade(s)
  - divide by number completed; for example:
    - if 3 quizzes (@10 pts), 1 worksheet (@10 pts), and 1 exam (@100 pts)
      - TOTAL = 140 points
      - divide by 1.4
    - if 7 quizzes (@10 pts), 2 worksheets (@10 pts)s, and 2 exams (@100 pts)
      - TOTAL = 290 points
      - divide by 2.9
    - etc.

- **Final** lab average:
  - Get Started Quiz is not included in final grade.
  - add 10 highest quiz grades, 5 highest worksheet grades, 3 exam grades, and optional Field Project grade
  - TOTAL =
    - 450 points without Field Project (Option I) OR
    - 500 points with Field Project (Option II)
      - divide either option by 4.5
Access to Content

I give access to the content when it is listed on the Semester Calendar. Answers to quiz and exam questions will be available once every classmate has submitted their assessment, but that day is usually the day after assessments are taken.

*In lab*, Get Started information can be accessed immediately, but course content in lab cannot be accessed until the second day of classes. Lecture content needs to be introduced first.

Examinations

The exams will be given on the dates listed on the Semester Calendar and will consist of objective questions on the material covered in Units 1, 2, and 3 (respectively). They are not cumulative, and they will be timed. The time limit will be strictly enforced with a penalty of five points per extra minute taken.

Quizzes

You must take the Get Started Quiz by **August 31st at midnight**. This assessment will not count toward your final grade, but you will be unable to advance in the course (open Content or take assessments) until you complete this quiz.

On the days indicated on the Semester Calendar, there will be a quiz designed to test your knowledge of the content covered in the unit to that point.

The quizzes typically contain ten objective questions and have a brief duration. As with the examinations, the time limit will be strictly enforced, with a penalty of five points per extra minute taken. Quizzes can be completed in the time limit if you are prepared, and you can view the correct quiz answers after they are due.

You cannot wait until the end of the semester to complete the quizzes; you must complete them as the semester progresses. **Quizzes are due on the dates indicated on the Semester Calendar and will not be accepted late.** (Think of failing to complete a quiz as missing an entire week of class.) **Additionally, your final grade will drop 5 percent for each quiz you do not complete beyond three.** (That is, if you do not complete seven quizzes, not only will you receive a zero for all seven quizzes, I will also drop your final lab grade 10% because you missed 7 quizzes beyond the allowed three). Note that there are eleven quizzes on the Semester Calendar, and I will drop the lowest score of those eleven quizzes.

When taking quizzes and exams, it is recommended that you save your responses as you complete each question.

Discussions and Worksheets

In the Nav Bar (Course Tools, Discussions), two Topics are of interest. **Questions** are designed to accommodate general questions, and it can be a great place to exchange information with your
classmates. **Worksheets** will function much like the lab table in a physical geology laboratory classroom. There are six graded Worksheet posts in this course, and the five highest will be averaged. You'll be able to exchange information about the samples in your LabPaq and compare notes on the physical properties of your samples. For each of the Worksheets, you will be placed in small, randomized groups and required to post that module’s Mineral/Rock Identification Worksheet. You must post your own Worksheet in order to view other students’ Worksheets, but do not post a blank or a *very* incomplete WS just to view what your classmates have posted. *(NOTE: If you ever observe this happening, please email and make me aware. Sometime, I overlook the duplication (b/c there are more than sixty of you and one of me!), but I want to know if you notice this occurring.)* After you have posted your worksheet, you can check your answers against other students’ answers and discuss any discrepancies. Your WS will be graded on the completeness of your submission. That is, if you submit a worksheet that isn’t entirely complete, you will not receive full credit. Note: The goal of the exercise is not to get every element of the Mineral/Rock Identification Worksheet correct on the first post but is instead for you to:

1. work together collectively to evaluate the samples and determine which is which, and  
2. have a firm command of the physical properties of each of the minerals and rocks covered in the course.

Worksheets are only helpful if classmates communicate and exchange ideas regarding the samples’ physical properties and identification. In order for online labs to have the same *breadth and rigor* as F2F labs, online group interchange with WS information is akin to F2F groups to interchange at lab tables. In both cases, students are assisting each other. The greatest results occur when information is exchanged *weekly*, so try to post your WS as early as possible, exchange information, and don't get behind. That way, you have time to make adjustments.

I expect all posts to be professional in nature. I respond *quickly* when a question is asked, but if I don’t respond to a question posted to the discussion board within a day (or two days on the weekend), please email via the D2L mail tool (tunerwl@d2l.sfasu.edu). I want you to always feel comfortable letting me know if you have questions.

**Field Project - for extra credit in lab 50 points added Due December 6th at midnight**

You'll learn in this course that geology surrounds us. The purpose of the Field Project is:

1) to help you become more aware of the uses of various rocks and  
2) to help you learn to accurately identify those rocks.

This project has several components:

First, you must locate and identify **10 different rocks** in your surroundings. The samples you identify must have:

- formed naturally in the Earth (i.e. you cannot claim concrete or man-made products as samples)  
- been refined (see explanation below) but still be identifiable by physical properties (that is, you cannot take a photo of a piece of drywall and count it as gypsum because you cannot identify gypsum by looking at a piece of drywall).  
- please do not submit photos of:  
  - chalk used on a blackboard (b/c most of it is a mixture of clay)  
  - chalkboards (blackboards) (b/c most are synthetic)  
  - rocks in the rock garden outside Miller Science  
  - gravel-sized fragments (along train tracks, trail you walked along, or from your yard)
samples from the LabPaq or from a personal collection
- minerals because the field project is focused on rock identification
- a refined rock sample would be ornamental stone sculptures, tombstones, countertops, walls, building stones, etc. in use today. Samples sold at Lowe's, Earth 'N' Stone, Kiva Floors, Home Depot, etc. are not acceptable for this project.

The purpose of this field project is to look around your surroundings and notice how many rocks have been used in a refined sort of way and how easy they are to identify by using the physical properties that you have learned in lab.

For each sample:

- take two photos (see below) of the sample and include a personal object in every photo
  - personal object should not be a penny, ruler, or rock hammer. Instead, use something small and unique like a keychain, ring, toy, etc.
  - personal object should not include confidential information (social security card, driver's license number, personal address, etc.)
    - purpose of including a personal object is to prevent photos from being downloaded from an internet site
- two photos:
  - one view zoomed out that displays the refined structure (tombstone, statute, etc.)
  - one view zoomed in so that I can observe physical properties and identify the sample
- photos should be clear (does not require the purchase of a quality camera)
- identify the sample and describe physical properties in photo that you used to identify
  - i.e., not generic like mineral composition, texture, etc. that could be used for a variety of rocks
- give location of sample (be as specific as possible!) so that it could be re-traced (include name of city and location where it was found, but do not include confidential information). However, you should be more specific than saying "in the creek behind my house in Dallas, Texas" or "along the railroad tracks in Nacogdoches, Texas."
- only one example of each rock may be used. That is, if you identify granite used for a countertop for one of your samples, don't use granite on a tombstone as another sample.
- cannot use variations of one rock for multiple samples. That is, don't count red granite and grey granite as separate samples.

A word to the wise: You may want to begin this assignment early, but you will not learn all of the rocks and their physical properties until around mid-semester. You should be able to find 7-8 rock samples quickly, but the last 2 or 3 may take more time. However, 10 different rock types can be found on the SFASU campus, so this project is not impossible nor does it require a visit to campus. Refined rocks are everywhere! This project does not take exorbitant amounts of time, but don't expect to complete it the day before it is due.

You may submit your project using any format. Some students prefer:

- Google Sites
  - you can build a site without writing a single line of code, and the building process is very easy. There are many pre-built templates available, though I encourage you to keep it simple. With Google Sites, there’s no need to buy or download software. It’s free, simple, and easy to use! If you have never used it, there are multiple YouTube tutorials you can visit.
  - D2L will not allow you to submit a Google Sites to the Dropbox, but you can submit the URL to the site to the Dropbox. I will open it separately.
- Prezi
- Document (only submit .docx, .doc, or .pdf files)
• Power Point
• other ways not listed.

Samples of Field Projects are posted as well as the rubric used to grade them. Each posted project has strengths, yet none of them followed all of the guidelines listed. I just wanted you to observe different posts before creating your own, and you will have access to your scored rubric once all projects have been graded.

Submit your Project in the Dropbox *(Course Tools in Nav Bar)*. A few projects are so large that they need to be submitted in parts, but 99% of them are not that large. Check the Semester Calendar for the due date.

*News on Home page*

Be sure and check (and read!) *News* on the Home Page frequently because that is where I post announcements and information.

*Final Exam Exemption*

If your final semester average is ≥ 93, you may be exempt from the final exam. Classmates may be exempt from the lecture final exam and not the lab final exam (or vice versa). However, students must have completed all quizzes and assignments to be exempt. Check with the instructor before assuming exam exemption.

*Deadlines posted*

I set a lot of deadlines and restrictions in online courses. If you ever note that one of the postings appears to be erroneous, please call it to my attention. I check (and re-check, and re-check, and re-check!) the postings, but I'm human and sometime overlook the errors.

*Understanding D2L Email*

• D2L Email is not only secure, but it is spam-free as well. Keeping it secure and spam-free, though, requires keeping it a closed system.
• D2L Email is an internal (closed) system which means that you must log into D2L to read and to reply to messages.
• Users do have a "forward" option which will forward copies of messages to an external email account such as Gmail, Yahoo, mySFA, and others. However, beware that ...
  o Users may not reply to a message from an external account. An example would be that Amy has her D2L email forwarded to her Gmail account. She reads her messages from her Gmail account, and if she wishes to reply, Amy must enter D2L to reply to the message. If she attempts to reply to the D2L message from inside her Gmail account, the message will fail to send.
• D2L limits attachment size to 600kb due to server size limitations.
• Email questions should be sent to turnerwl@d2l.sfasu.edu

*UNIVERSITY POLICIES*

• Academic Integrity

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways, including instruction on the components of academic honesty and abiding by university policy on penalties for cheating and plagiarism.
Definition of Academic Dishonesty

Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit. Careers have ended because of academic dishonesty. If you have any questions about what does or does not constitute plagiarism, please let me know. In doing so, we can avoid what could potentially be a very costly and serious error. I take plagiarism very seriously and will not tolerate it.

Please read the University's complete Academic Integrity policy at http://www.sfasu.edu/policies/academic_integrity.asp.

- Withheld Grades (Semester Grades Policy, A-54)

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

- Students with Disabilities

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Tentative Course Calendar
<table>
<thead>
<tr>
<th>Week</th>
<th>Module</th>
<th>Assignments</th>
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<tbody>
<tr>
<td><strong>Unit 1: Minerals</strong></td>
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<tr>
<td>August 26</td>
<td>Get Started information</td>
<td>- Order LabPaq Kits so that they will be available when you begin the course content. &lt;br&gt;- Access to Gol 131 Laboratory Get Started information begins on August 26. Complete the Get Started Quiz by August 31 at midnight. &lt;br&gt;- Access to lab content/worksheets/quizzes does not begin August 31.</td>
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<tr>
<td>September 2</td>
<td>Module 1: Physical Properties, Part I</td>
<td>- Read syllabus, semester calendar, week's content &lt;br&gt;- Complete Mineral Identification Worksheet #1 and post to your group's worksheet topic by Sept 6 at midnight &lt;br&gt;- Complete Quiz #1 by Sept 6, 11:59 p.m. (CST) &lt;br&gt;  - I have used photos for this quiz, so it can be taken without the LabPaq kit if you are waiting on your difference check.</td>
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<td>September 9</td>
<td>Module 2: Physical Properties, Part II</td>
<td>- Read week's content &lt;br&gt;- Complete Mineral Identification Worksheet #2 and post to your group's worksheet topic by Sept 13 11:59 p.m. (CST) &lt;br&gt;- Complete Quiz #2 by Sept 13, 11:59 p.m. (CST) &lt;br&gt;  - I have used photos for this quiz, so it can be taken without the LabPaq kit if you are waiting on your difference check.</td>
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<tr>
<td>September 16</td>
<td>Module 3: Physical Properties Review</td>
<td>- Read week's content &lt;br&gt;- Complete Mineral Identification Worksheet #3 and post to your group's worksheet topic by Sept 20, 11:59 p.m. (CST) &lt;br&gt;- Complete Quiz #3 by Sept 20, 11:59 p.m. (CST)</td>
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<tr>
<td>September 23</td>
<td>Unit 1 Review and Exam</td>
<td>- Complete Lab Mineral Exam on Sept 27, 12:01am-11:59pm &lt;br&gt;- Complete Lecture Exam #1 on Sept 26, 12:01am-11:59pm</td>
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<td><strong>Unit 2: Rocks</strong></td>
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<td>September 30</td>
<td>Module 1: Igneous Rocks</td>
<td>- Read week's content &lt;br&gt;- Complete Igneous Rock Worksheet#4 and post to your group's worksheet topic by Oct 4, 11:59pm (CST) &lt;br&gt;- Complete Quiz #4 by Oct 4, 11:59pm (CST)</td>
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<tr>
<td>October 7</td>
<td>Module 2: Sedimentary Rocks</td>
<td>- Read week's content &lt;br&gt;- Complete Sedimentary Rock Worksheet #5 and post to your group's worksheet topic by Oct 11, 11:59 pm (CST) &lt;br&gt;- Complete Quiz #5 by Oct 11, 11:59pm (CST)</td>
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<td>October 14</td>
<td>Module 3: Metamorphic Rocks</td>
<td>- Read week's content &lt;br&gt;- Complete Metamorphic Rock Worksheet #6 and post to your group's worksheet topic by Oct 18, 11:59pm (CST) &lt;br&gt;- Complete Quiz #6 by Oct 18, 11:59pm (CST)</td>
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<tr>
<td>Date</td>
<td>Module/Activity</td>
<td>Instructions</td>
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<td>October 21</td>
<td>Module 4: Rocks in Your Head</td>
<td>• Complete Quiz #7 by Oct 25, 11:59pm (CST)</td>
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<tr>
<td>October 28</td>
<td>Unit 2 Review and Exam</td>
<td>• Complete Rock Exam on Nov 1, 12:01am-11:59pm (CST)</td>
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<td>• Complete Lecture Exam #2 on Oct 31, 12:01am-11:59pm</td>
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<td><strong>Unit 3: Topographic Maps</strong></td>
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<td>November 4</td>
<td>Module 1: Location</td>
<td>• Read week’s content</td>
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<td>• Complete Quiz #8 by Nov 8, 11:59pm (CST)</td>
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<td>November 11</td>
<td>Module 2: Contouring</td>
<td>• Read week’s content</td>
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<td>• Complete Quiz #9 by Nov 15, 11:59pm (CST)</td>
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<td>November 18</td>
<td>Module 3: River and Arid Topographic Maps</td>
<td>• Read week’s content</td>
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<td>• Complete Quiz #10 by Nov 22, 11:59 pm (CST)</td>
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<td>December 2</td>
<td>Module 4: Groundwater and Glaciations Topographic Maps</td>
<td>• Read week’s content</td>
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<td>• Complete Quiz #11 by Dec 6, 11:59pm (CST)</td>
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<td></td>
<td>• Field Project Due Dec 6, 11:59pm (CST)</td>
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<td>• Survey Due Dec 6, 11:59pm (CST)</td>
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<td>December 9</td>
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<td>• Complete Lecture Exam #3 on Dec 11, 12:01am-11:59pm</td>
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<td>• Complete Lab Exam #3 on Dec 12, 12:01am-11:59pm</td>
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