CoSM Class Syllabus / Policy

2020 / Fall Semester, First ½ Term
GEOL 1301.504
Fundamentals of Earth Science

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Office Hours: This is an online course and office hours will be offered electronically. In office hours available by appointment.

The lecture and laboratory portion of this class are both online courses. Please refer to the detailed calendar found at the end of the syllabus. There is a mandatory quiz associated with the syllabus, so please read all the information in this unit carefully and then complete the Course Information and Syllabus Quiz and Laboratory Procedures Quiz in order to proceed into the course material.

Note: these quizzes must be completed before any of the course material will be made available, the lecture and laboratory modules will remain locked until you complete this quiz.

Text and Materials

- Fundamentals of Earth Science Laboratory Kit (available from the SFA Barnes & Noble bookstore)

COVID-19 Mask Policy

Although we do not have any face-to-face class meetings scheduled, you are welcome to visit with me in my office. University policy dictates that masks (cloth face coverings) must be worn over the nose and mouth at all times in university buildings and appropriate physical distancing must be observed. Students not wearing a mask and/or not observing appropriate physical distancing will be asked to leave. All incidents of not wearing a mask and/or not observing appropriate physical distancing will be reported to the Office of Student Rights and Responsibilities. Students who are reported for multiple infractions of not wearing a mask and/or not observing appropriate physical distancing may be subject to disciplinary actions.

More information on the SFA Policy for Face Coverings: http://www.sfasu.edu/fall2020

Information regarding face coverings and social distancing from the Centers for Disease Control: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html
Course Description

Fundamentals of Earth Science (GEOL 1301) Two hours lecture, two hours laboratory per week. An introduction to the fundamental principles of Earth Science: topics include the earth’s structure and surface landforms; mineral and energy resources; geologic hazards such as volcanoes, earthquakes and landslides; water resources; and the unifying theory of plate tectonics. Required lab fee. No prerequisites.

Program Learning Outcomes

There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and / or a service course.

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 GEOL 1301 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 for Lecture and Lab

After successful completion of this course students will be able to:

- Demonstrate an understanding of fundamental geologic concepts as it relates to Earth processes and landscape evolution through geologic time.
- Use quantitative reasoning to interpret geologic data (tables, figures, graphs) from primary research, data assimilation and models to assess the differences in competing scientific theories associated with rock formation.
- Demonstrate knowledge on the interdependence of science and technology and the influences geologic reasoning associated with identifiable and testable hypotheses of geologic processes.
- Critically assess the interrelationships between geologic phenomena and communicate the resulting conclusions in oral, visual and written formats.
• Demonstrate an understanding of the skills and attitudes necessary for effective teamwork in collaborative learning activities.

Course Requirements

GEOL 1301 (Fundamentals of Earth Science) is an introduction to the study of the earth’s structure and natural processes. In this course, students will be introduced to and apply the scientific method to evaluate hypotheses regarding the earth’s structure, the distribution of natural resources, the immediate and long term impact of geologic hazards, and anthropogenic influence on the natural world.

The Federal Definition of the Credit Hour: a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours out of class student work each week for approximately fifteen weeks for one semester of credit.

This class is a 3-credit hour course and has a weekly requisite lab where students will gain hands-on experience with earth materials, gathering and analyzing data, communicating their findings and working as a team to explain scientific processes. Fundamentals of Earth Science contains extensive written content that includes the same information students in a face-to-face lecture course receive, requiring students to engage the online modules for at least three hours per week. Primary source readings are woven into the content to support key concepts and provide perspective on earth science concepts. In addition, students are required to complete quizzes/exams over the course content, participate in weekly discussion forums, and complete multiple writing assignments that evaluate their comprehension of earth materials and processes. Successful completion of all elements for the course requires at least six hours of additional student work each week.

Time

Remember, you are expected to spend the same amount of time on online courses that you would spend for in the classroom for face-to-face courses. That is, expect to spend two hours per week on the lecture portion and two hours per week on the laboratory portion. In addition, success in this course would also require additional time spent in the material and studying; reports indicate that two to three additional hours (per credit hour) be spent—indeed time independent of whether the class is online or face-to-face. Many of you are choosing to take an online course because of your work schedule, family responsibilities, and scheduling conflicts, so your time is precious. Be aware of the time commitment required by this course and work responsibly.

Course Topics *

Unit One - Earth in Context

• Geologic Time / Earth in context
• Minerals and Native Elements
Unit Two – Earth Structure and the Rock Cycle

- Intrusive Igneous Rocks
- Weathering and Erosion
- Sedimentary Rocks
- Metamorphic Rocks

Unit Three - Earth Processes

- Plate Tectonics and the Natural Environment
- Earthquakes
- Volcanoes
- Rock Deformation and Geohazards

Unit Four - Earth Resources

- Fossil Fuels
- Mineral Resources
- Water Resources
- Soil Resources

Unit Five - Earth in Society

- Alternative Energy
- Populations and Resources

*Please see the Course Calendar at the end of the syllabus for the dates associated with each of these topics.

Access to Content

I give access to the content on Monday morning, 6:00 a.m. as listed on the Course Calendar. Lecture exams will be available on the following Mondays between 6:00 a.m. and Monday 11:30 p.m. You will be able to receive your score on exams or quizzes once everyone has completed the exam and any answers that need to be individually graded have been scored. In these cases, time will be needed to review the assessments and make sure questions were asked and graded fairly. Answers to quiz and exam questions will be available once every classmate has submitted their assessment. Quizzes, unit, and module content will be available until 11:30 p.m. the day before an exam, but module content cannot be viewed the day of an exam. So, plan appropriately!

Lecture Examination Schedule*

- Exam 1: Monday, August 31, 2020 (6:00 a.m. to 11:30 p.m.)
- Exam 2: Monday, September 14, 2020 (6:00 a.m. to 11:30 p.m.)
- Exam 3: Monday, September 21, 2020 (6:00 a.m. to 11:30 p.m.)
- Exam 4: Monday, October 5, 2020 (6:00 a.m. to 11:30 p.m.)
Exam 5: Tuesday, October 13, 2020 (6:00 a.m. to 11:30 p.m.)

**Laboratory Examination Schedule**

- Midterm Exam: Friday, September 11, 2020 (6:00 a.m. to 11:30 p.m.)
- Final Exam: Monday, October 12, 2020 (6:00 a.m. to 11:30 p.m.)

*Please see the Course Calendar at the end of the syllabus for the opening and closing times associated with these exams.

All exams will include any or all of the following sections: 1) multiple choice questions; 2) true / false questions; 3) fill in the blank questions; 4) short answer questions; 5) figure illustration; 6) short essay questions. **All exams will take place online and be delivered via d2l.** The exams will cover questions from lecture modules and assigned activities and outside sources (videos, webpages) referred to in the material. Laboratory exams will cover materials in the laboratory including rock and mineral identification and concepts developed in weekly activities.

There are between 30 and 50 questions each on each exam, and you will be given 60-75 minutes to complete the exams. The exams are not cumulative, but they are timed and you will not have adequate time to refer back to reference material. Questions on lecture exams and quizzes are written by the instructor, and the assessment content has been presented in the online content. D2L randomly selects questions from a question bank, and they appear one question at a time. You may not return to any question and change your answer after leaving that page so be sure of your response (study ahead of time!) before answering. It is recommended that you save your responses as you complete each question because of unknown timing of computer or power failure. I cannot help you if questions have not been saved. Once the time allotment for the exam has expired, the exam will be ended and scored.

No outside work or extra credit will be assigned to help improve your grade, so be prepared for the quizzes and exams. It is imperative that you log on and participate in all course material, pay attention to the course calendar, and keep up with the due dates for quizzes, discussions, and exams. In other words – get your money’s worth!

**Late Work**

This is not a self-paced course and you must keep up with the weekly assignments. Each week you will be required to interact with your classmates and me by participating in discussion forums, completing laboratory module activities, and completing quizzes in lecture and laboratory. It is imperative that you check the course calendar daily and be aware of the opening and closing dates of the modules and associated activities. If you miss one of the deadlines for an exam or quiz, please contact me to gain access. **The most efficient way to communicate with me is via email, either mySFA or d2l.**

**Grading of late work:**

- **Discussion Posts** - No time extensions will be offered for discussion posts as you will have already missed the opportunity to interact with your peers.
• **Lecture Quizzes and Exams** - You will automatically lose 25% of your earned grade if you submit late work within 24 hours after the due date. You will continue to lose points as time elapses: 50% of your earned grade will be deducted if your work is submitted within 24-48 hours. After 48 hours, no credit will be given.

• **Laboratory Quizzes and Assignments** - You will automatically lose 25% of your earned grade if you submit late work within 24 hours after the due date. You will continue to lose points as time elapses: 50% of your earned grade will be deducted if your work is submitted within 24-48 hours. After 48 hours, or once the answers to the laboratory activities are posted, no credit will be given.

• **Alternative Energy Group Project** - No time extensions will be offered for this activity.

**Grading of late work:** *For the purposes of determining your grade, the time stamp on your submitted quiz or exam will be used to determine the amount deducted.*

**Dependable internet connection**

Especially when taking quizzes or exams, always rely on a dependable internet connection. I do not recommend taking an assessment via your phone or any unstable wireless connection (McDonalds, Starbucks, etc).

**Discussion Board**

The Discussion Board can be used as a place to exchange information amongst the instructor and classmates. There will be a general "Questions" post where students can ask questions regarding the weekly content. This is helpful to all, and I will respond to questions as quickly as possible. Please keep your discourse respectful to all, inappropriate comments will not be tolerated. If I miss your question in Discussions, please email and give me a gentle reminder. I always appreciate questions, and am happy to try to help.

**Lecture Grading Policy**

- Five exams (Exam 1 = 40 points, Exam 5 = 60 points, Exams 2-4 = 100 points each) = 400 points
- Fifteen online quizzes @ 10 points each = 150 points
- Fifteen discussion posts @ 10 points each = 150 points
- Total possible points = 700 points
- Lecture grade = your total points / 700, then multiply by 100
- Example: your lecture point total 520 / 700 = 0.74 x 100 = 74

**Laboratory Grading Policy**

- Two exams @ 100 points each = 200 points
- All laboratory activities = 200 points, including:
  - Laboratory quizzes, 9 quizzes @ 10 points each = 90 points
  - Plate Tectonics Map and Discussion Activity = 20 points
  - Earthquake Press Release = 20 points
  - Soil Resources Presentation = 20 points
Fundamentals of Earth Science

- Group Alternative Energy Group Position Statement = 30 points
- Group Project Discussion Forum = 10 points
- Group Project Survey = 10 points
- Total possible points = 400 points
- Laboratory grade = your total points / 400, then multiply by 100
- Example: your laboratory point total 310 / 400 = 0.77 x 100 = 77

Course Final Grading Policy

- Lecture counts 2/3 (66.7%) of the final course grade
- Lab counts 1/3 (33.3%) of the final course grade
- Total Points for Final Grade: 33.3% (Lab) + 66.7% (Lecture) = final course grade
- Example: Lecture grade = 74, Lab grade = 77
- 74 x .667 = 49.36; 77 x .333 = 25.64; 49.36 + 25.64 = 75.00 final course grade

Grade Scale  90-100 + A, 80-89 + B, 70-79 + C, 60-69 + D, < 60 = F

Grades from the lecture and lab will be combined, with the lab counting 1/3 of the grade. You will receive one grade for the entire course, assigned by your instructor.

Academic Integrity (A-9.1)
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, as well as 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.

Please read the complete 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/](http://www.sfasu.edu/disabilityservices/).

**Course Calendar**
Dates may change at the discretion of the instructor. Should a date change be required, it will be announced on the course homepage under the News tab and/or via d2l email. Print the Course Calendar and check it frequently to avoid missing deadlines. Please note: 12:00 p.m. = noon, 12:00 a.m. = midnight. Lab assignments and due dates are highlighted in blue.

<table>
<thead>
<tr>
<th>Start Date</th>
<th>Module</th>
<th>Assignments</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 1 – Earth in Context</strong></td>
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</tbody>
</table>
| August 20 | Getting Started/Course Information | Read the Start Here! Module  
Print the Course Calendar  
Introduce yourself on the “Getting to Know Me” discussion board  
Take the Syllabus and Course Information Quiz | August 30 |
| | Getting Started/Laboratory Procedures | Read the Start Here! Laboratory Procedures  
Order the laboratory kit from SFA Barnes & Noble  
Take the Laboratory Procedures Quiz | August 30 |
| August 24 | Earth in Context / Geologic Time | Read the module content  
Complete the EIC/GT Quiz  
Participate in the EIC/GT Discussions | August 30 |
| | Lab 1 – Geologic Time | Read the laboratory module content  
Complete the laboratory exercises  
Complete Laboratory Quiz 1 – Geologic Time | August 30 |
| August 24 | Minerals and Native Elements | Read the module content  
Complete the Minerals and Native Elements discussion post and quiz | August 30 |
| | Lab 2 – Minerals and Native Elements | Read the laboratory module content  
Complete the laboratory exercises  
Complete Laboratory Quiz 2 – Minerals | August 30 |
| **August 31** | **Lecture Exam 1** | **Earth in Context, Geologic Time, Minerals** | **August 31** |
| **Unit 2 – Earth’s Structure and the Rock Cycle** |
| August 31 | Intrusive Igneous Rocks | Read the module content  
Complete the Intrusive Igneous Rocks discussion post and quiz | Sept 6 |
<table>
<thead>
<tr>
<th>Lab 3 – Igneous Rocks</th>
<th>Read the laboratory module content Complete the laboratory exercises Complete Laboratory Quiz 3 – Igneous Rocks</th>
<th>Sept 6</th>
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</thead>
<tbody>
<tr>
<td>Weathering, Erosion and Sedimentary Rocks</td>
<td>Read the module content. Complete the Sedimentary Rocks Quiz and Weathering and Erosion discussion</td>
<td>Sept 6</td>
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<tr>
<td>Lab 4 – Sediments and Sedimentary Rocks</td>
<td>Read the laboratory module content Complete the laboratory exercises Complete Laboratory Quiz 4 – Sediments and Sedimentary Rocks</td>
<td>Sept 6</td>
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<tr>
<td>Metamorphic Rocks</td>
<td>Read the module content. Complete the Metamorphic Rocks discussion post and quiz</td>
<td>Sept 13</td>
</tr>
<tr>
<td>Lab 5 – Metamorphic Rocks</td>
<td>Read the laboratory module content Complete the laboratory exercises Complete Laboratory Quiz 5 – Metamorphic Rocks</td>
<td>Sept 10</td>
</tr>
<tr>
<td>Laboratory Midterm Exam</td>
<td>Labs 1-5</td>
<td>Sept 11</td>
</tr>
<tr>
<td>Lecture Exam 2</td>
<td>Igneous, Sedimentary, and Metamorphic Rocks</td>
<td>Sept 14</td>
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### Unit 3 – Earth Processes

<table>
<thead>
<tr>
<th>Plate Tectonics</th>
<th>Read the module content Complete the Plate Tectonics discussion post and quiz</th>
<th>Sept 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab 6 – Plate Tectonics and Natural Resources</td>
<td>Read the laboratory module content Complete laboratory exercises Upload your copper porphyry map to the Dropbox</td>
<td>Sept 13</td>
</tr>
<tr>
<td>Volcanoes, Earthquakes</td>
<td>Read the module content Complete the Earthquake and Volcanoes discussion post and quiz</td>
<td>Sept 20</td>
</tr>
<tr>
<td>Lab 7 - Earthquakes</td>
<td>Read the laboratory module content Complete the laboratory exercises Complete the written assignment for the Earthquake Analysis Exercise and submit to dropbox.</td>
<td>Sept 20</td>
</tr>
<tr>
<td>Rock Deformation and Geohazards</td>
<td>Read the module content Complete the Geohazards discussion post and quiz</td>
<td>Sept 20</td>
</tr>
<tr>
<td>Lab 8 – Geohazards</td>
<td>Read the laboratory module content and complete the laboratory exercises. Upload your geohazards activity to the Dropbox</td>
<td>Sept 20</td>
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<tr>
<td>Date</td>
<td>Activity</td>
<td>Topics</td>
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<tr>
<td>Sept 21</td>
<td>Exam 3</td>
<td>Plate Tectonics, Volcanoes, Earthquakes, Rock Deformation and Geohazards</td>
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**Unit 4 – Earth Resources**

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<thead>
<tr>
<th>Sept 21</th>
<th>Fossil Fuels</th>
<th>Read the module content Complete the Fossil Fuels discussion post and quiz</th>
<th>Sept 27</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Lab 9 – Fossil Fuels</td>
<td>Read the laboratory module content Complete the laboratory exercises Complete Laboratory Quiz 9 – Fossil Fuels</td>
<td>Sept 27</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Sept 21</th>
<th>Mineral Resources</th>
<th>Read the module content Complete the Mineral Resources discussion post and quiz</th>
<th>Sept 27</th>
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<tbody>
<tr>
<td></td>
<td>Lab 10 – Mineral Resources</td>
<td>Read the laboratory module content Complete the laboratory exercises Complete Laboratory Quiz 10 – Mineral Resources</td>
<td>Sept 27</td>
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</table>

<table>
<thead>
<tr>
<th>Sept 28</th>
<th>Water Resources</th>
<th>Read the module content Complete the Water Resources discussion post and quiz</th>
<th>Oct 4</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Lab 11 – Water Resources</td>
<td>Read the laboratory module content Complete the laboratory exercises Complete Laboratory Quiz 11 – Water Resources</td>
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<table>
<thead>
<tr>
<th>Sept 28</th>
<th>Soil Resources</th>
<th>Read the module content Participate in the Soil Resources discussion post and quiz</th>
<th>Oct 4</th>
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<tbody>
<tr>
<td></td>
<td>Lab 12 – Soil Resources</td>
<td>Read the laboratory module content Complete the laboratory exercises Upload Soil Resources Presentation and soil report to the Dropbox</td>
<td>Oct 4</td>
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**Unit 5 – Earth and Society**

<table>
<thead>
<tr>
<th>Oct 5</th>
<th>Alternative Energy</th>
<th>Read the module content Participate in the Alternative Energy discussion</th>
<th>Oct 11</th>
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<tbody>
<tr>
<td></td>
<td>Lab 13 – Alternative Energy</td>
<td>Participate in the Alternative Energy Group Project Upload your position statement to the dropbox Complete the Group Participation Survey</td>
<td>Oct 11</td>
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| Oct 5   | Populations and Resources | Read the module content Participate in the Populations and Resources discussion | Oct 11   |

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<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Topics</th>
<th>Date</th>
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<tbody>
<tr>
<td>Oct 12</td>
<td>Laboratory Final Exam</td>
<td>Plate Tectonics and Natural Resources, Earthquakes, Geohazards,</td>
<td>Oct 12</td>
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<td>Fossil Fuels, Mineral Resources, Water Resources, Soil Resources</td>
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<td>(Labs 6-12)</td>
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<tr>
<td>Oct 13</td>
<td>Exam 5</td>
<td>Alternative Energy, Populations and Resources</td>
<td>Oct 13</td>
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