Mondays and Wednesdays: 1 PM to 4:10 PM Synchronous On-line via Zoom (1st 8-weeks)
Office hours: 12:30 to 1 pm on Mondays, Tuesdays, Wednesdays, and Thursdays On-line via Zoom or by appointment. You may contact me by email at borouqt@arc.losrios.edu or voicemail: (916)286-3691 ext. 12121. The best way to get in touch with me is through email. For additional information, visit my web page at https://web.arc.losrios.edu/~borouqt/ You can also go to the ARC home page and use the quick link to faculty web pages and input my name. I will also be on Canvas as well!

Course Prerequisites and/or Advisories:
Advisories: MATH 32 or 42; and eligible for ENGRD 310 or ENGRD 312 AND ENGWR 300, OR ESLR 340 AND ESLW 340.

Required Text: “FOUNDATIONS OF EARTH SCIENCE” by Edward J. Tarbuck and Frederick K. Lutgens. The text should be available through Chegg.com, Borders.com, Amazon.com, BN.com, the ARC Book Store, etc. Electronic copies and rentals are available in addition to Paperback and Loose-leaf versions! The CD-ROM that comes with the older editions of this book is an excellent source of information, interactive exercises, quizzes, etc. Double check that the CD ROM (4th and 5th editions) is included or that you can access the online supplements (www.masteringgeology.com) for the 6th and 7th and 8th editions, or the smart figures and videos that utilize Quick Response (QR) codes! The Mastering Geology Course ID is: MGEO1BOROUGHS0577984

Grade Breakdown: 100-90% = A, 89-80% = B, 79-65% = C, 64-50% = D, Below 50% = F
Exams and/or Quizzes = 40%; Final Exam = 10%; Homework = 50% taken from various sources; Extra credit = 5%

Course Description and Student Learning Outcomes:
This is an introductory science course covering major topics in geology, oceanography, meteorology, astronomy, scientific method and philosophy of science. It focuses on Earth as a dynamic and continually evolving planet and emphasizes the relationships between human-Earth interactions. Field trips may be required. This course is not designed for science and/or geology majors. This course may not be taken with GEOL 301 (Physical Geology Laboratory). Earth Science is the study of the Earth, the processes that operate on, at or beneath its surface, and its origin and change through time. Major topics of Earth Science include astronomy and the Earth’s formation, oceans, mineral and rock formation, earthquakes and plate tectonics, Earth’s interior layers, fossil life and ancient climates, weather, and surface processes including rivers, groundwater, glaciers, wind, waves, and landslides, etc.

This in-depth course provides an understanding of the dynamic nature of the Earth through the study of geology, oceanography, meteorology, astronomy, scientific method and philosophy of science of the Earth. It will also investigate earth processes including plate tectonics, plate boundary events and features of the ocean basins, earthquakes and the earth's interior, mineral and rock systems, groundwater, development and destruction of landforms, glaciers, deserts and examples of environmental geology, etc.

(Student Learning Outcomes) Upon completion of this course, the student will be able to:

- describe the Big Bang origin theory of the universe and explain the importance of stellar fusion to the formation of elements that make up the known universe.
- classify the planets in our solar system as terrestrial and Jovian and list the characteristics of each category.
- outline the processes and features associated with running water, groundwater, glaciers, wind, and waves that impact Earth's surface.
- cite the factors/processes that are responsible for producing Earth's seasons, weather, and climate.
- describe divergent, convergent, and transform plate tectonic boundaries in terms of the geologic processes (seismic activity, subduction, volcanism) and landforms found at each.
- illustrate, with real world examples, issues affecting daily life, such as earthquake risks, volcanic hazards, mass wasting, rising sea levels, climate change, and use-abuse of natural resources.
• classify rocks by their visible characteristics as igneous, sedimentary, and metamorphic rock types.

Course Format:
Synchronous On-line Lecture, but if the campus opens up again, then exams will be held on campus. Primarily lecture using multiple learning styles to address the fact that different students often learn differently. Some students are more visual, some are more auditory, etc. In other words, I tend to use a combination of learning materials during lecture. I will talk about a specific topic while using various visual aids, while at the same time utilizing the white board to define vocabulary, etc. I will also provide several handouts (on-line) with more detailed information, data tables, figures not found in your text book, etc. The end result is that the student should be exposed to a topic several times in different formats to address different learning styles and, hopefully, so that the repetition ensures retention of the material. In addition to lecture, some class time will be set aside to discuss homework assignments, exam reviews, current events in geology, slide shows of real-life examples of geological features in the field, etc.

Assignments:
The homework assignments will consist of a combination of: Multiple Choice; True/False; Matching and identification; Short Answer; Crossword puzzles (for vocabulary) and Essay questions, etc. All completed homework assignments must be turned in on the date specified by the syllabus and/or the instructor to receive credit. The deadline for homework is 12 (midnight) on the due date. All Homework must be submitted via Canvas or by using either the quiz system or file uploads (also via Canvas).

Anything submitted after midnight on the due date is considered late and is subject to the following policies.

DO NOT SEND MULTIPLE IMAGE FILES!!! If you take photos of your homework make sure that the images are readable and they are inserted into a single file using one of the following formats: Word Document; RTF (rich text format); or PDF and then submit via Canvas. If you fail to follow these guidelines, your assignment may be automatically rejected. This may result in the assignment being marked as late or receive a zero if the appropriate format is not received by the necessary deadline(s)! Include your answers in a single attachment only. Multiple image files will not be accepted! If you must use images, insert them into a single document and then submit that document via Canvas!

Late Assignments and/or Make-up Policy:
All students can turn in up to 3 (three) late homework assignments, up to one week or two subsequent class meetings following the due date for that assignment. If the late homework is turned in during the allotted time, the assignment will still receive credit, depending upon completeness. However, if the allotted time has passed or the student has already turned in three late assignments, the late assignment will receive a zero. Notice: I keep track of your late assignments. Exceptions: No homework will be accepted after the day of the Final! This policy also does not apply to extra credit assignments.

Anyone who does not turn in two homework assignments in a row may be dropped from the course. Anyone who misses more than one exam may be dropped from the course! If, for any reason, you can no longer attend the class, it is YOUR responsibility to drop yourself and be sure to submit the appropriate paperwork yourself!

The Exams will consist of: Multiple Choice; True/False; Matching; Short Answer; Slide identification; and Essay questions. Cell Phones must be stowed and/or stored away during exams! You will need a #2 pencil, an 882 Scantron and a calculator for exams (if the campus opens up, otherwise they will be completed on-line). Pop Quizzes or online quizzes will also contain a variety of questions. There will not be any make up exams. I will drop your lowest exam (not quizzes) at the end of the semester. There are no make ups for Pop Quizzes or online quizzes, if you miss one, your score will be zero. There will be no make-up for the Final exam unless previously discussed with instructor!

Academic Dishonesty and Disruptive Classroom Behavior:
Cheating and/or plagiarism will NOT be tolerated! For example, copying word-for-word from an internet source without the proper use of quotation marks and internal referencing of the source of material constitutes plagiarism and will be dealt with appropriately. Copying homework and/or exam answers from
a classmate will constitute academic dishonesty and both parties may be held accountable. Anyone caught doing either will receive an “F” for that assignment or face additional and possibly more severe penalties such as academic probation, etc. depending upon the severity and number of incidences! Of course, the examples mentioned above are only a few of the many possible activities that may be considered to be academic dishonesty and/or dishonest classroom behavior. All of which will receive the appropriate action, depending upon the severity of the behavior. A minor incident, may just receive a warning, but more serious or multiple incidents, will face more severe consequences. At the very least this type of academic dishonesty or inappropriate behavior will produce a student file with the Disciplinary Officer here on campus. If additional reports are filed by other instructors a pattern of behavior will be established and may result in the more severe penalties such as academic probation, suspension, expulsion, etc. which may be included on the student’s official transcripts. Students who copy, cheat or plagiarize betray the trust of students who do their own work!

Inappropriate or disruptive behavior – yelling, persistent loud talking during lectures or student presentations, sexist or racist remarks, or harassment of any kind will not be tolerated. If a disruption is serious enough, a disruptive student may be asked to leave class, “(may be suspended) “for the day of the removal and the next class meeting” (Ed Code). Any days spent in suspension from class are considered unexcused absences.

Any inappropriate, unacceptable, or criminal conduct in class or on a field trip may result in an "F" for that assignment, as well as criminal prosecution, suspension from the college, or even expulsion from college depending upon the act or conduct and its severity! At the very least this type of academic dishonesty or inappropriate behavior will produce a student file with the Disciplinary Officer here on campus. If additional reports are filed by other instructors a pattern of behavior will be established and may result in the more severe penalties such as academic probation, suspension, expulsion, etc. which may be included on the student’s official transcripts. The school, district, and instructor will also not be held liable for any injuries, etc. incurred as the result of the afore-mentioned inappropriate conduct. For further details, please read the American River College Class Schedule, the Student Conduct Code, or visit the following link, http://www.arc.losrios.edu/Support_Services/Office_of_Student_Conduct/Expectations_of_Student_Behavior_and_Conduct.htm. In other words, as a student of American River College, YOU will be subject to the Student Conduct Code and will be held responsible for your actions; whether they are dishonest behaviors such as cheating and/or plagiarism, or inappropriate and/or criminal behavior, which disrupts the classroom learning environment and/or endangers the safety of your fellow students or campus personnel.

Please turn off Cell Phones before coming to class! At the very least, you should set your cell phones to vibrate. A ringing cell phone is very distracting when it goes off during an exam!!! A ringing telephone may result in being asked to leave the classroom.

Excessive talking, texting, etc. during lecture or other behavior which is disruptive and interferes or obstructs normal classroom procedures will result in one (1) warning. If that warning is not effective, the person(s) responsible will receive a written assignment on a topic at the instructor's discretion, which will be due the following class meeting. This applies to episodes within a single class meeting or repeated episodes over a series of class meetings. The format for the written assignment is as follows: one (1) full page of text typed with a 12-point font. The assignment will be worth a 100-point homework assignment. If the assignment is not turned in as instructed or if there is any evidence of plagiarism, etc., the student will receive a zero for the assignment. If this procedure is not successful in dealing with the disruptive behavior, the student may be asked to leave the classroom, at which point college sanctions and disciplinary measures, per the Student Conduct Code, may be implemented. Repeated episodes may result in the involvement of the Science Division Dean and/or the Disciplinary Officer.

Special Needs:
If you have a health problem, a documented learning disability, or a physical need of some kind, please let me know. I am committed to helping all students achieve their educational goals. If you require classroom or examination accommodations due to a physical or learning disability, please contact Disabled Students’ Programs and Services at (916) 484-8545 to discuss your needs. I will help ensure
that you receive any accommodations approved by DSPS. If using the DSPS test center, please make your appointment for the time and day of the exam and pass that information on to me. Be sure to make any necessary appointments early, due to competition for limited testing space. For example, many former students who experience dyslexia, found it easier to read the exams during a test situation, when the font size is much larger than usual. If this applies to you, let me know, so that I can print out the large font exam. However, if you wait until the day of the exam, I may not be able to accommodate you.

Support Services:
If you need to access any of the many support services available here on campus, please check out the following website, it has links to some of the various services available on campus. http://www.arc.losrios.edu/support_services.htm

These services include:

- **Science Success Center:** This center provides a series or workshops to promote various science skills, such as concept mapping, textbook comprehension, test preparation, problem solving, etc. You can also earn a ½ unit of credit! Their goal is for students to learn to identify and apply efficient studying strategies to your science classes. These strategies can also be applied to other classes! You can visit the center in room 491 or contact them via: scc@arc.losrios.edu or (916)484-8204

- **"MESA is a learning community for students pursuing four-year degrees in the fields of mathematics, science or engineering. By providing resources, information, opportunities, and financial support, MESA helps students achieve in the classroom, progress academically, and develop professionally. Students receiving financial aid or fee waivers may be MESA eligible. Visit the MESA Center, 131 Liberal Arts or contact Will Davis – daviswe@arc.losrios.edu or (916) 484-8510."**

- **TRIOS STEM Program:** A new STEM (Science, Technology, Engineering, and Math) program for students. As new information becomes available, I will pass it on.

- **Re-Entry Center:** If you have been away for any length of time, their goal is to help you make a successful transition back to school. You can call (916) 484-8391 or 484-8456 or E-mail: reentry@arc.losrios.edu for more information.

- **DSPS (Disabled Students Programs and Services):** and their goal is to promote equal access to programs and facilities at American River College, thereby insuring that students with disabilities experience the opportunity to participate fully in campus activities. The philosophy of DSPS is to encourage maximum independence and personal empowerment through a successful educational experience and their website is: http://web.arc.losrios.edu/~dsps

- **LRC (Learning Resource Center):** Offers a variety of services, including tutoring on a variety of subjects.

- **CJOCC (Career and Job Opportunity Center):** offers an array of resources to assist students in choosing career options, planning for college, and researching current job openings. All services are provided at no charge. The Career Center offers workshops on resume writing, job search strategies, and interview information & techniques each month. Their website is: http://web.arc.losrios.edu/~career

**Last but not least:**
If you have any questions or class-related problems during the semester, please visit me during my office hours or send me an email. I will respond as promptly as possible. If you email me, try to give me at least 24 hours to respond. If you send a message a few hours before class, I may not even be near a computer to answer your message!

If, for any reason, you can no longer attend the class, it is YOUR responsibility to drop yourself and be sure to submit the appropriate paperwork yourself!

**FYI:** Campus policy states that ARC is now a smoke/tobacco, and vape (STV) free campus as of January 1st, 2016. Please be courteous to others.

**FYI:** The campus is now strictly enforcing the limited attempts rule. These attempts include taking the course and receiving an “F” or even a “W.” For example, after the third attempt, the automated enrollment system will not allow the student to enroll in the course again.
SAFETY ISSUES and PROCEDURES (If we return to Campus)

- Due to the increased number of students on campus these days, there is an increased risk of a student collapsing, suffering a seizure, heart attack, stroke, etc. As a result, all of us, students and instructors alike might be called upon to assist in an emergency. In such a situation, I may be focused on looking after the student involved in the emergency. As such, I may not be in a position to call the appropriate numbers or contact the appropriate emergency personnel. Therefore I want you to be aware of some of the emergency procedures, equipment, and personnel that are in place on the campus, just in case your assistance is necessary.

- A list of emergency procedures and campus phone numbers is posted near the door. The room number is also listed on this placard. You will need to relate the room number and/or location to the campus police.

- If there is a fire alarm sounding, please go the nearest parking lot in an orderly fashion and wait until the area is given the all clear.

- The new District-wide police number is 916-558-2221. Please dial zero (0) to reach a person and bypass the automatic answering system in an emergency and specify that you are on the ARC campus! The current police numbers for the colleges will remain activated for a significant period of time during the transition to the new number, but we encourage everyone to start using the new number immediately.

- The most significant change will be the Department's new phone answering system. They system was designed to more effectively handle high call volume by routing emergency calls or other calls that require an officer response and non-emergency calls to specific areas within the department. All emergency and officer response type calls will be handled by the 24 Hour Police Communications Center (PCC) at Sacramento City College (all emergency phones will continue to be answered directly by the PCC). All campus specific non-emergency calls will be handled by the dispatchers/clerks assigned to that particular campus during business hours (8:00AM-5:00PM, M-F, M-TH during the summer session). However, the officers will still be on duty 24 hours a day. If you require officer assistance or have an emergency, please call the Los Rios Police Department Dispatch at Sacramento City College 916-558-2221 or use one of the convenient emergency phones throughout the campus.

- An emergency phone is located in the hallway between rooms 425 and 426.

- **The phone answering system will work as follows:** When you call the 558-2221 number or any of the existing police department phone numbers, you will hear the following prompt:

  “You have reached the Los Rios Police Department, if you have an emergency or need an officer dispatched to your location for assistance, push zero now (Your call will go immediately to the PCC and an officer will be dispatched). If you need non-emergency assistance such as parking or citation information, lost and found inquiries, or other information, for American River College and its centers, push (1)...” (The dispatcher/clerk assigned to that specific campus will answer and assist you during business hours).

- Please contact the campus police first (number is on the emergency placard near the door district Police Communications Center (PCC at 916-558-2221), remember to designate the ARC campus by pushing 1; they are better equipped to direct and alert the necessary emergency personnel to the room. They are also capable of notifying the campus nurse’s office, which can direct personnel to the scene very quickly and are better able to assess the situation.

- If the emergency is of a serious and life-threatening nature and the person(s) in question is unconscious, etc. please call 911 and inform the campus police (that you have also called 911) and they will send for the appropriate emergency personnel.

- If the emergency does not appear to be too serious or life-threatening, then the nursing personnel that are located here on campus may be able to treat the person in question. By notifying the campus police 1st they can send a representative from the nurse's office right away, whether or not the situation is serious or life-threatening. The nursing personnel would then be in a better position to assess the situation.

- The nurse’s office (Health Center, 484-8383) is located in the Admissions and Records office down the middle hallway near the door facing towards the library, career center, and quad and across from the Admissions and Records Counter. It is near the small courtyard atrium and the counters where students fill out their forms and wait in line for the Admissions and Records Counter.

- If the situation is very serious and time is an issue, I may need various volunteers; some to direct emergency personnel, someone to alert the nurse’s office, someone to make the appropriate phone calls, people to keep the area clear surrounding the person in question, and so on.

- There is a first aid kit usually stored under the classroom sink, unless otherwise identified by instructor.

- Please remember that bodily fluids, such as blood, saliva, etc. can carry and transmit diseases, especially if they come in contact with broken skin. The first aid kit located previously contains gloves for such an occasion.

- Even though the risk of such an emergency is very low, it is best to have some plan of action just in case, which is why I have included this information in your syllabus packet. These types of emergencies have occurred before in the Science Division and elsewhere on campus, so it is best to be prepared.

Instructor: Ms. Terry J. Boroughs
GOALS:
1. Learn about Earth Science!
2. Learn to use the scientific method.
3. Become aware of your surroundings.
4. Learn to make observations.
5. Learn to use deductive reasoning.
6. Make conclusions based upon your observations, etc.
7. Put these observations, deductions, conclusions, etc. down in a concise, written form.
8. Improve your study and organizational skills and become better prepared for your future job and/or career.
9. Have Fun!

KEYS TO SUCCESS:
1. Attend class regularly.
2. Take notes and pay attention during lecture.
3. Refrain from talking during lecture!
4. Ask appropriate questions when necessary. Otherwise attend office hours for more detailed questions.
5. Read chapters carefully, preferably prior to the lecture on the corresponding topic.
6. Complete homework and/or lab work on time. Don’t wait until the last minute!
7. Don’t get behind!
8. Show up for exams prepared, e.g. have an 882 Scantron and a #2 pencil available (If we return to campus, otherwise exams will be on-line).
9. Be respectful of your instructor and fellow students. Treat others, as you would want to be treated!

CLASS SCHEDULE – Geology 305 (Mondays and Wednesdays)

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS AND ASSIGNMENTS DUE</th>
<th>READ CHAPTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 10</td>
<td>Continue the Nature of the Solar System and the Planets. Begin “Beyond the Solar System.” Galaxies, stars, etc.</td>
<td>15 and 16</td>
</tr>
<tr>
<td>June 12</td>
<td>Last Day to Drop Class with refund</td>
<td></td>
</tr>
<tr>
<td>June 12</td>
<td>Last Day to Drop Class Without Notation on Record</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Assignment</td>
<td>Homework Due</td>
</tr>
<tr>
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</tr>
<tr>
<td>June 17</td>
<td>The Planets, Asteroids, etc. Homework Due. Continue Minerals. Begin Igneous Activity and Volcanism</td>
<td>1, 2, 7, and 16</td>
</tr>
<tr>
<td>June 22</td>
<td>Last Day to Enroll</td>
<td></td>
</tr>
<tr>
<td>June 22</td>
<td>Beyond the Solar System Homework Due. Continue Igneous Activity and Volcanism. Begin Rocks: Sedimentary, Metamorphic, and Igneous. Exam #1 on the Solar System and the Planets</td>
<td>1, 2, 7, and 16</td>
</tr>
<tr>
<td>June 23</td>
<td>Last Day to Petition for Pass/No Pass</td>
<td></td>
</tr>
<tr>
<td>June 24</td>
<td>Minerals Homework Due. Continue Rocks.</td>
<td>1, 2, 7</td>
</tr>
<tr>
<td>June 29</td>
<td>Igneous Activity Homework Due. Begin Geologic Time. Quiz #2 on Beyond the Solar system.</td>
<td></td>
</tr>
<tr>
<td>July 1</td>
<td>Volcanism Homework Due. Continue Geologic Time and begin Dynamic Earth (folds, faults, earthquakes, etc.) Review for exam. Exam #2 on Minerals</td>
<td></td>
</tr>
<tr>
<td>July 6</td>
<td>Rocks Homework Due. Begin Earthquakes, Geologic Structures, and Mountain building. Continue Geologic Time.</td>
<td>2, 7, 6, 8</td>
</tr>
<tr>
<td>July 8</td>
<td>Geologic Time Homework Due. Continue Earthquakes, Geologic Structures, and Mountain building. Begin Plate Tectonics. Review for exam. Exam #3 on Igneous Activity and Volcanism</td>
<td>5 and 6</td>
</tr>
<tr>
<td>July 13</td>
<td>Quiz #3 on Rocks. Continue Earthquakes, Geologic Structures, and Mountain building, and Plate Tectonics Begin Oceans.</td>
<td>6 and 9, 10</td>
</tr>
<tr>
<td>July 15</td>
<td>Dynamic Earth (Earthquakes, Geologic Structures, and Mountain building) Homework due. Continue Plate tectonics and Oceans and begin Landscapes (if time permits).</td>
<td>9, 10, 3, 4</td>
</tr>
<tr>
<td>July 17</td>
<td>Last Day to Drop Class with a &quot;W&quot; Grade</td>
<td></td>
</tr>
<tr>
<td>July 20</td>
<td>Plate Tectonics (mountain building, etc.) Homework Due. Begin Landscapes fashioned by water (Mass Wasting, Rivers and Groundwater). Review for exam. Quiz #4 on Geologic Dating</td>
<td>3 and 4</td>
</tr>
<tr>
<td>July 22</td>
<td>The Oceans homework Due (9 &amp; 10 combined). Begin Glacial and Arid Landscapes. Exam #4 on the Dynamic Earth: Geologic Structures, Earthquakes, etc.</td>
<td>3 and 4</td>
</tr>
<tr>
<td>July 27</td>
<td>Landscapes Homework due. Continue Glacial and Arid landscapes. Begin weather including: the Atmosphere, Clouds and Precipitation, etc. Review for Final exam. Quiz #5 on Plate Tectonics</td>
<td>11, 12, 13</td>
</tr>
<tr>
<td>July 29</td>
<td>Weather Homework (Atmosphere, etc.) (extra credit) Due. Continue weather: The Atmosphere in motion and Weather patterns and severe weather (if time permits?) Final Exam. Extra credit assignments due.</td>
<td>13, 14</td>
</tr>
</tbody>
</table>

Syllabus and Class schedule are subject to change at the instructor’s discretion.

***The ARC Indigenous Land Statement***
We acknowledge the land which we occupy today as the traditional home of the Maidu and Miwok tribal nations. These sovereign people have been the caretakers of this land since time immemorial. Despite centuries of genocide and occupation, the Maidu and Miwok continue as vibrant and resilient Federally recognized tribes and bands.

We take this opportunity to acknowledge the generations that have gone before as well as the present-day Maidu and Miwok people.