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| **Geology 158 - Natural Disasters** |
| **Sping Quarter 2013** (10061, SEC 02) |  | **Instructor**: Sonjia Leyva |
| **Hours**: TTh 11:40 am – 1:20 pm |  | **Office:** Bios 125, 323-343-2149 |
| **Room**: SH E184 |  | **Office Hours:** TTh 10:30 – 11:00 am |
| **Webpage:** www.geophile.net/College |  | **Email:** sleyva@calstatela.edu |
| **Course Description and Objectives:** This course reviews the causes, characteristics, and case histories of the natural disasters that have plagued human history. Topics include earthquakes, volcanic eruptions, landslides, storms, floods, giant sea waves, meteor impacts, climate changes, and mass extinctions. Suggestions are made for avoiding geologic hazards. Lectures are illustrated with photos that demonstrate the severity of natural disasters. Students are introduced to Internet websites that enable them to pursue any topic in greater detail in order to more fully evaluate and prepare for natural events. |
| **Text & Materials:** * Geology 158 Natural Disasters Lecture Notes by Sonjia Leyva (available in the bookstore or the class website [www.geophile.net/College](http://www.geophile.net/College))
* Enrollment in GEOL158 - Natural Disasters in Moodle
* Internet Access for reading material on websites
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| **Week** | **Date** | **Topic** |
| 1 | 4/2 | Lecture: Introduction |
| 4/4 |
| 2 | 4/9 | Lecture: Plate Tectonics |
| 4/11 |
| 3 | 4/16 | Lecture: Earthquakes |
| 4/18 |
| 4 | 4/23 | Lecture: Earthquakes Case Studies |
| 4/25 |
| 5 | 4/30 | Lecture: Tsunami |
| 5/2 | **MIDTERM EXAM** |
| 6 | **5/7** | Lecture: Volcanoes |
| 5/9 |
| 7 | 5/14 | Lecture: Volcano Case Studies **(Last day to turn in extra credit EQ kits)** |
| 5/16 |
| 8 | 5/21 | Lecture: Storms |
| 5/23 |
| 9 | 5/28 | Lecture: Floods |
| 5/30 |
| 10 | 6/4 | Lecture: Fire |
| 6/6 | Lecture: Mass Wasting **(Last day to turn in extra credit)** |
| **11** | **6/11** | **FINAL EXAM – 10:45 am – 1:15 pm** |

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| **Quizzes:**

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| **Quiz #1: Introduction (04/01 – 04/07)** |
| **Quiz #2: Plate Tectonics (04/08 – 04/14)*** USGS: This Dynamic Earth - the Story of Plate Tectonics (<http://pubs.usgs.gov/gip/dynamic/dynamic.html>)
* History of Global Plate Motions (<http://www.uwgb.edu/dutchs/platetec/plhist94.htm>)
* Why Does Earth's Magnetic Field Flip? (<http://news.nationalgeographic.com/news/2004/09/0927_040927_field_flip.html>)
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| **Quiz #3: Earthquakes (04/15 – 04/21)*** The Science of Earthquakes (<http://earthquake.usgs.gov/learn/kids/eqscience.php>)
* Earthquake Myths (<http://www.scec.org/education/public/allmyths.html>)
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| **Quiz #4: Earthquake Case Studies (04/22 – 04/28)*** The Great 1906 San Francisco Earthquake (<http://earthquake.usgs.gov/regional/nca/1906/18april/index.php>)
* Honshu Mw=9 Earthquake 11 March 2011 (<http://cires.colorado.edu/~bilham/Honshu2011/Honshu2011.html>)
* Michoacan, Mexico 1985 September 19 13:17:47 UTC Magnitude 8.0 (<http://earthquake.usgs.gov/earthquakes/world/events/1985_09_19.php>)
* Earthquake Damage, Mexico City, September 19, 1985 (<http://www.johnmartin.com/earthquakes/eqshow/647003_00.htm>)
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| **Quiz #5: Tsunami (04/29 – 05/05)*** The Tsunami Story (<http://www.tsunami.noaa.gov/tsunami_story.html>)
* How does the Tsunami Warning System work? (<http://www.tsunami.noaa.gov/warning_system_works.html>)
* The Deadliest Tsunami in History? (<http://news.nationalgeographic.com/news/2004/12/1227_041226_tsunami.html>)
* Earthquakes and Tsunamis in Sumatra: What we have recently learned (<http://www.tectonics.caltech.edu/outreach/highlights/sumatra/>)
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| **Quiz #6: Volcanoes (05/06 – 05/12)*** How Volcanoes Work (<http://www.geology.sdsu.edu/how_volcanoes_work/>)
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| **Quiz #7: Volcano Case Studies (05/13 – 05/19)*** 1973 Heimaey Eruption, Iceland (<http://vulcan.wr.usgs.gov/Volcanoes/Iceland/Publications/ManAgainstVolcano/heimaey_1973_eruption.html>)
* Mount St. Helens (<http://volcanoes.usgs.gov/volcanoes/st_helens/st_helens_geo_hist_101.html>)
* How Volcanoes Work - the Nevado del Ruiz eruption (<http://www.geology.sdsu.edu/how_volcanoes_work/Nevado.html>)
* Using Science to Solve Problems: The Killer Lakes of Cameroon (<http://www.globalchange.umich.edu/globalchange1/current/lectures/kling/killer_lakes/killer_lakes.html>)
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| **Quiz #8: Storms (05/20 – 05/26)*** Understanding storms and fronts (<http://usatoday30.usatoday.com/weather/wstorm0.htm>)
* JetStream - Online School for Weather (<http://www.srh.weather.gov/jetstream/index.htm>)
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| **Quiz #9: Floods (05/27 – 06/02)*** The Hows and Whys of Floods (<http://www.pbs.org/newshour/infocus/floods/science.html>)
* Flooding and Flood Risk (<http://www.floodsmart.gov/floodsmart/pages/flooding_flood_risks/ffr_overview.jsp>)
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| **Quiz #10: Fire and Mass Wasting (06/03 – 06/09)** |

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| **METHODS OF EVALUATION, GRADING, ATTENDANCE**: |
| **Exams -** There will be two exams - one midterm and one final. Makeup exams will be given only to those who can verify a valid excuse for missing an exam. The makeup will be given at a time that is mutually agreeable to both the student and myself, but must be arranged prior to the initial exam.  |
| **Quizzes –** This class has no textbook. Instead, students will view various websites in order to gain a deeper understanding of the topics covered in lecture. Students are required to log onto Moodle and take a weekly quiz. Each quiz will be worth 20 points and will cover what we have learned (or will learn) in class that week in addition to the required website readings. Students may access the quiz anytime from 8 am Monday through 11:59 pm Sunday. Students may take the quiz only once. **Students who do not take the quiz during the allowed time will not be allowed to make up the quiz unless they have an excused absence. No exceptions!** |
| **Attendance** - Students are expected to attend each class session and to arrive on time. Funding for this University is based on student attendance, therefore YOU MUST ATTEND CLASS if you wish to get credit for this course. However, if you miss a class session of valid reasons (illness), it will up to you to make arrangements to complete the missed activity. **Students who miss a class due to an unexcused absence will NOT be allowed to turn in the project late or make up an exam.** Make-up exams will be given only to those who can verify a valid excuse for missing the exam. The make-up exam will given at a time that is mutually agreeable to both the student and myself. **Failure to take the make-up exam within one week of the original assignment date OR before the last week of class will result in the missed exam counting in as a zero. All proof of excused absences MUST be shown PRIOR to the student making up the exam or turning in the project late, & MUST be BEFORE the last day of class.** |
| **Assessment -** Your grade in this class is based upon the points YOU earn through completing quizzes and exams. Nothing in this class is curved. Your grade is based upon your performance. Your final grade in this class is based on your percentage score out of 400 points. See the table below.You may do up to 20 points of extra credit work to raise your total points earned (please see attached list). All extra credit is due the last day of class – not the day of the final. By doing extra credit you agree that you will NOT ask to have your grade “bumped up” at the end of the quarter.

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|  | **Points possible** | **Total Points Possible** | **% of grade** |
| **Exams** | 2 exams at 100 points each | 200 | 50.0% |
| **Quizzes** | 10 @ 20 points each | 200 | 50.0% |
|  | **Total**  | **400** | **100%** |
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| **Want to get a good grade? Here’s how:** 1. Attend every class.
2. Take notes and review them after class and before exams.
3. Read the textbook.
4. Ask questions. **You** are responsible for studying.
 | A = > 90% |  > 360.0 points |
| B = 80 - 89% | 320.0 - 359.9 points |
| C = 70 - 79% | 280.0 - 319.9 points |
| D = 60 - 69% | 240.0 - 279.9 points |
| F = < 60% |  < 300.0 points |

**Cheating and plagiarizing will not be tolerated. ANYONE caught cheating or plagiarizing an assignment will receive an “F” in the class. NO EXCEPTIONS.** |