

**Cincinnati Christian University**  
**Foster School of Biblical Studies, Arts & Sciences**

**DANGEROUS EARTH NSCI 215**  
Fall 2018, PH 105 TH 8:30 a.m. – 9:45 a.m.  
3 Semester Credit Hours

Professor Rick Bullard Office: PH 104  
Phone: 244-8673 Email: [rick.bullard@ccuniversity.edu](mailto:rick.bullard@ccuniversity.edu)

**Text: Natural Disasters; Patrick L. Abbot, 10<sup>th</sup> Edition: McGraw Hill, 2016**

**Course Description:** This course investigates the ways in which the dynamic natural processes of this planet affect our society including geologic hazards such as volcanoes, earthquakes, landslides, flooding, and coastal erosion. Emphasis will be placed on the geology of northern Kentucky and southwestern Ohio, and the ways in which geologic conditions and geologic processes influence our lives.

**Goals:** Upon completion of this course, the students are expected to have the following expertise:

- An understanding of the concepts of geologic hazards and the processes that cause them
- An understanding of how these processes affect our everyday life
- A knowledge of the geology and environmental geologic conditions in the Tristate and an appreciation of the way that geologic factors have influenced social and economic development of this area
- Improved observational abilities with respect to appreciation of the local geologic environment.

**Outcomes:** Upon completion of this course, you should have an understanding of the scientific theories explaining the causes and effects of natural geologic hazards and how they affect society (A&S 5). In addition, you will have an appreciation of the geology of the northern Kentucky and southwestern Ohio and the impact that geologic conditions and processes have had on this region (A&S 3 and 4). Finally, you will have the ability and critical thinking skills to identify and evaluate certain hazardous conditions and settings to enhance the safety of your life (A&S 3 and 4).

**Outcomes for the Arts & Sciences Department**

**A&S 1** Communicate effectively in both oral and written forms in a variety of rhetorical contexts, including Standard English

**A&S 2** Adeptly utilize modern research and writing tools

**A&S 3** Identify decisive events and ideas in the human experience and assess their influences on modern culture and thought

**A&S 4** Employ critical and creative thinking and mathematic and scientific principles for problem solving, literary and socio-cultural analysis, intercultural understanding, and research in the sciences and humanities

**A&S 5** Demonstrate the integration of academic insights and experiences by constructing and employing a personal framework in which ethical decisions can be made in light of societal values and a Christian worldview

**Course Requirements and Policies:** This is a rigorous course that requires high quality work from you. You are expected to attend lectures and read the principal text and additional assigned reading materials, do the reading prior to class, and fully participate in class discussions. Lectures are designed to cover the basic concepts and provide supplemental material to that presented in the text. Material available on the Internet also will be used for additional assignments. All assignments must be turned in on time and in a clear and concise manner.

**Attendance:** All students play a vital role in this class and are **required to attend lectures**. After your third unexcused absence, five points will be deducted from your final grade. Unexcused late arrivals (2) and early departures will also count as an absence. **More than 4 absences results in being dropped from the class.**

**Academic Support:** Students who require academic accommodations due to any documented physical, psychological, or learning disability should request assistance from the Academic Support Director within the first two weeks of class. You may contact the office by phone (244-8420).

**Assessment:** Your understanding of the course material and ability to apply that knowledge in every-day life will be assessed in the following ways: 1) knowledge of material including terms, concepts, and examples on quizzes, exams and research report (A&S 1 and 2); 2) analysis of examples and real-life situations on research report and field trips (A&S 1-3); 3) evaluation of dangerous geological settings on field trips and subsequent write-ups (A&S 1-4).

### Course grading:

The final grade will be based on the following course responsibilities:

|   |                    |
|---|--------------------|
| • Exams (four @ 100 points each)                              | 400 points         |
| • 2 field trips and write-ups (@ 100 points each)             | 200 points         |
| • One in class and one on <b>your own (handout)</b>           |                    |
| • Pop Quizzes (about once a week)                             | 150 points         |
| • Case Study Research Report (*See below*)                    | 150 points         |
| • Case Study Presentation (presented in class per topic flow) | <u>100 points</u>  |
| <b>Total</b>  | <b>1000 points</b> |

The pop quizzes will be given periodically as part of a lecture period. Questions will cover materials from that day's reading assignment. You may use hand written notes that you have taken while studying that day's reading assignment.

### Grading Scale:

- A 90 – 100%** - indicating exceptional mastery of the subject, and the ability to interpret and apply course concepts to everyday life.
- B 80 – 89%** - indicating above average performance fulfilling course requirements and exhibiting some mastery of material regarding completeness, accuracy, comprehension, and application
- C 70 – 79%** - indicating satisfactory performance at the collegiate level, having dedicated sufficient time for course work, and demonstrated knowledge of course content and methods
- D 60 – 69%** - indicating sub-standard performance and limited understanding of course material, and may not have completed all assignments, or may not have supplied sufficient effort.
- F 59% and below** – indicating failure for unsatisfactory or incomplete work.

## Tentative Schedule:

| <u>Day</u>               | <u>Chapter</u> | <u>Topic</u>   |
|--------------------------|----------------|--|
| August 21                | 1              | Intro to Course, Population Problem                          |
| August 23                | 2              | Intro to Earth's Systems                                     |
| August 28                | 2              | Earth's Systems and History                                  |
| August 30                | 2              | Plate Boundaries and Behavior                                |
| September 4              |                | Plate Tectonics Video  |
| September 6              | 3              | Earthquakes, Video   |
| September 11             | 4              | Earthquakes  |
| <b>September 13</b>      |                | <b>Research Day – No Class</b>                               |
| September 18             | 8              | Tsunami  |
| September 20             | 5              | Earthquake Case Histories                                    |
| <b>September 25</b>      |                | <b><u>Exam 1 (Ch. 1-5, 8)</u></b>                            |
| September 27             | 6              | Plate Tectonics and Volcanism                                |
| October 2                | 7              | Ancient Volcano Case Histories                               |
| <b>October 4</b>         |                | <b>Fall Recess – No class</b>                                |
| October 9                | 7              | Modern Volcano Case Histories I                              |
| <b>October 11</b>        |                | <b><u>Exam 2 (Ch. 6-7)</u></b>                               |
| October 16               | 15             | Mass Movement I Video  |
| October 18               | 15             | Mass Movement Case Histories Video                           |
| <b>October 23</b>        | during class   | <b>Mass Movement Field Trip</b>                              |
| October 25               | 13             | Streams & Floods   |
| October 30               | 13             | Flood Case Histories   |
| November 1               | 9              | Atmosphere   |
| <b>November 6</b>        |                | <b><u>Exam 3 (Ch 13, 15)</u></b>                             |
| November 8               | 12             | Climate Cycles and Ice Age                                   |
| November 13              | 10             | Storms and Tornadoes   |
| <b>November 15*</b>      | 10             | Tornadoes, Video ( <b><u>Paper due</u></b> )                 |
| <b>November 19-23</b>    |                | <b>Thanksgiving Break</b>                                    |
| November 27              | 11             | Hurricanes and Case Studies                                  |
| November 29              | 11             | Hurricane Video & Case Studies                               |
| December 4               | 14             | Fire & Case Studies  |
| December 6               | 17, Epilogue   | Extinctions  |
| December 11              |                | Local Hazards  |
| December 13              |                | Review   |
| <b>December 11 or 13</b> |                | <b><u>Exam 4 (Ch. 9-12, 14, 17, Epi. &amp; Tristate)</u></b> |

\*\*It is to be understood that this is an outline of the class schedule and probably will be modified as we go along.

### **\*Research Report (due November 15) – no late work will be accepted**

You are to investigate a geological hazards case study of your choosing using the following guidelines:

- 1) five full pages of text (minimum), 12 point font, 1 inch margins, page numbers
- 2) cover sheet / title page
- 3) **every paragraph referenced** (except introduction and conclusion)
- 4) additional pages of appropriate maps, charts, photos, etc.
- 5) bibliography
- 6) resources can include internet, books, articles, etc.
- 7) text must be in **your own words** – plagiarism of any kind will not be tolerated and will result in a zero on the assignment.
- 8) You will be graded on the quality of your work and your ability to follow these guidelines.
- 9) **You will present this case study at the appropriate point in the topic flow.**

**ALL CELL PHONES MUST BE ON VIBRATE MODE OR OFF DURING LECTURE, AND MUST BE TURNED OFF DURING EXAMS.**