INTRODUCTION to EARTH SCIENCE
ESCI 121 Section 2
SPRING 2018

class meetings: M, W 2:20 - 4:00 PM, BBH 116

Instructor: Jean Hemzacek
Office: BBH 221B ph. 773 442-6056
Hours: M, W 12:30 – 1:30; M 4:15 – 4:45 pm
T 9:00 – 10:00 am or by appointment
email: J-Hemzacek@neiu.edu

text: no required text (see notes regarding course resources)
course website: access public webpage for course via link in D2L or through:
http://homepages.neiu.edu/~jmhemzac/homepage.htm (hint: google ‘hemzacek’)

COURSE INFORMATION
Description (from catalog): Basic concepts of geology, meteorology, oceanography, and the solar system.
Discussion of topics of current interest in the earth sciences. Laboratory involves the study of minerals, rocks,
maps and weather instruments. Lecture 2 hours, lab 2 hours. Credit Hours: 3.0
Prerequisite: (MATH-091 - 499 or MATH-091A - 499Z or NEIU Math Placement Result 02 - 45 or ACT Math 19 - 36 or Accuplacer
Elementary Algebra 060 - 084 or Accuplacer College Level Math-020 - 120).

COURSE OBJECTIVES
After successfully completing this course, students should be able to:
• Describe the earth as a dynamic planet: the product of various earth processes.
• Describe the structure of the earth and the nature of solid earth materials.
• Apply the basic tools and techniques to study earth processes and earth materials.
• Explain the significance and components of plate tectonics as a scientific theory, and interpret earth form
and process with respect to this geologic framework.
• Describe the various physical processes (from within and on the surface) which shape our planet, and
explain the sources of energy for each of these dynamic processes.
• Discuss the nature and causes of geologic hazards, including earthquakes, volcanoes, landslides, floods,
and severe weather, as the result of intrinsic earth processes.

STUDENT TASKS / REQUIREMENTS
Exams will integrate concepts and practical applications. Each exam will cover new material but will also
incorporate key concepts upon which we build throughout the semester. There are NO make-up exams.

A term project will be based on skills learned in class and lab. Details are provided in separate documents.

Homework will be assigned more or less on a weekly basis, submitted to D2L unless otherwise designated.
Assignments are due as specified. Within 24 hours, a 20% penalty is assessed; no credit for later assignments.
Refer to Homework Criteria for details about required format and grading of assignments.

Labs are in-class activities, usually working in small groups, and turned in either at the end of the lab session or
beginning of next lab, as directed. Because of the nature of these activities, make-ups are only possible under
extenuating circumstances.

Occasional ungraded in-class activities (other than labs) will be collected as part of the class contribution
element; no make-ups are possible for these opportunities. Class contributions include team citizenship, which
means respecting others, putting forth your best effort, & actively participating/engaging/contributing in class.
This “extra credit” can boost you to the next letter grade, but will NOT substitute for missed course elements.

Grading Policies and Grade Calculation:
The final course grade will be calculated as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>exams (2 @ 12.5%)</td>
<td>25%</td>
</tr>
<tr>
<td>final exercise</td>
<td>10%</td>
</tr>
<tr>
<td>homework assignments</td>
<td>20%</td>
</tr>
<tr>
<td>term project</td>
<td>10%</td>
</tr>
<tr>
<td>lab activities / in-class</td>
<td>35%</td>
</tr>
<tr>
<td>class contributions</td>
<td>+2% (“extra credit”)</td>
</tr>
</tbody>
</table>

All course requirements must be completed to pass the course.
The grading scale is as follows:
A 100-90%;  B 89-80%;  C 79-70%;
D 69-60%;  F 59% and lower.
Regarding Topics Covered and Text Resources:
This course is an introduction to Earth Science, with lab. Rather than attempting an ‘all-inclusive’ survey of earth science topics, we will cover selected topics to explore connections between physical processes of the earth system and our own observations and experience; we will highlight key aspects of those topics to better understand the "structure," the "plumbing," and the "climate control" of our home: planet Earth.

Textbook Policy: There is no specific, required textbook for this course. Many texts are available on the subject of introductory earth science; older editions in particular are available through on-line sources at substantially lower cost, and you may select any text that works for you. I recommend that you have a suitable text available as a reference for this course. Some recommended texts (and in the bookstore) have been updated regularly, and therefore a large number of older editions are widely available. Additional information regarding other appropriate texts is posted in D2L. Whatever your choice, you are responsible for supplementing this class with resources on material in order to appropriately participate in this class. If obtaining a textbook presents a hardship, the instructor has a limited number of texts available for loan. See me for more information.

About the Class Sessions:  [refer also to page titled “Tips to Succeed in this Course”]
Students are expected to attend all scheduled classes. As a natural science laboratory, this class requires hands-on participation. Lab activities are a critical part of the course; information from lab work is integral to and integrated with discussions (i.e., not separate sessions), so regular attendance is vital to your success. Not all topics covered in class are similarly covered in textbooks; you are responsible for all material covered, and all information given, in class. You should also note relevant policies regarding late work.

Learning is enhanced by an interactive and collaborative environment. This course incorporates working in small groups. Productive group dynamics depend on a positive attitude & acceptance of diversity: each group member will have different opinions, experience, and work styles. The ability to work well with others is an important skill necessary in virtually all careers, as well as in daily life. In this class we will build, practice, and enhance these skills while exploring earth science.

Your questions in class are welcome at any time, and are also a key component of the course. Questions relevant to the topic are not ‘interruptions’: they are important contributions. If something is unclear, asking a question can help all of us. Questions are also the impetus to explore other interesting aspects of a topic. So, speak up – in class, before class, after class – to share your thoughts.

Class activities may emphasize specific aspects of a topic, while requiring individual responsibility for other material. A general guideline for any college course is that you should invest time outside of class at a ratio of at least 2:1, relative to contact hours. For this course (4 contact hrs), that means 8 hours per week outside of class (reading, homework, and review) should be your expected commitment for success. This course fulfills a General Education Natural Science laboratory requirement. As a GenEd-level class, topics are covered at an introductory level; but it still is a college-level course, and you are expected to treat it as such.

What to bring to class:
Each class period, you should have all of the following available and ready at the scheduled start time for each class session: a notebook or binder with loose leaf paper for notes; a folder for handouts, labs, assignments, etc.; any print-outs that you were required to bring; writing utensils (always include pencil & eraser for a lab class; colored pencils/ pens/ markers are also useful); don’t forget a good attitude and readiness to participate; and an open mind!

Web resources and e-contact:
Details of written assignments, important announcements, and other information for this class will be posted on the course web page and/or in D2L; you are expected to check these resources frequently, so that you are aware of course updates, deadlines, and requirements. Watch your (NEIU) email for D2L alerts. Assignments are listed on the due date; note the course policy regarding late assignments.

You are expected to maintain e-mail contact throughout the semester, by regularly checking your NEIU email account, the primary way that your professors and the university can and will contact you.
Now is a great time to practice the appropriate, professional ways to communicate with your teachers and your future professional colleagues. The familiar format used in texting is not appropriate for these contacts; the following is a reminder of (and expectations for) proper, business-like communication.

**How to E-Mail your Professors… an example to follow:**

Subject: gives a clear idea of the message (e.g.: ESCI121 question; Request for appointment; etc.)

(Dear/ Hi/ Hello/ Aloha) (Professor Hemzacek/ Prof. Jean/ Prof. H),

I capitalize the first letter of all my sentences and I end my all my sentences with a punctuation mark.

Although I should use my NEIU email account for university communication, sometimes using that account is not convenient for me, so I might use another email account. However, I always make sure that I’m not sending you messages from an address like 2nastee4U@email.com

No matter which email account I use (and even if my name is part of the email address), I always sign my name at the end of the message and identify myself as a member of this particular class. This format—with salutation, body, and signature—is how I will always initiate contact with you. In a back-and-forth conversation following an initial email, I may drop this formal format, but I will continue to capitalize and punctuate as appropriate so that you can clearly understand my communication.

(Thank you/ All the best/ Sincerely/ Aloha/ etc.), Your first and last name, course & section number

**A NOTE ABOUT ACADEMIC INTEGRITY, HONESTY AND RESPONSIBILITY**

You are paying for an education, not just for a grade. (By the way, you’re not really paying for a grade, either, but for the *opportunity to earn a grade.*) Education is gained through honest, diligent work. **Cheating will not be tolerated.** Academic dishonesty includes looking at someone else’s paper during an exam, utilizing resources in unauthorized ways, copying the work of others in class or for assignments, having someone else do your work, or otherwise intentionally misrepresenting work as your own honest effort. You should note that simply changing a few words, or the order of some words, from a resource is still plagiarism! *Even when working with a group, your individual paper must clearly show evidence of individual thought and effort (and words).*

By enrolling in this course, you are bound by the NEIU Student Conduct Code whether or not you have read it (available at: [http://www.neiu.edu/university-life/student-rights-and-responsibilities/student-code-conduct](http://www.neiu.edu/university-life/student-rights-and-responsibilities/student-code-conduct)). Incidents of dishonesty will earn a zero on that assignment/exam, and possibly an F for the course. NEIU policy also outlines more severe sanctions, including academic dismissal, if warranted. Please see me before handing in work if you have any questions on what constitutes cheating or plagiarism; our course webpage has resources that will help to clarify this topic for you.

**ADA Statement:** NEIU complies with the Americans with Disabilities Act (ADA) in making reasonable accommodations for qualified students with disabilities. To request accommodations, students with special needs should contact the Student Disability Services (SDS) office, room D104; contact SDS via (773) 442-4595 or [http://www.neiu.edu/university-life/student-disability-services](http://www.neiu.edu/university-life/student-disability-services).

**Campus Safety:** A safe university environment is a shared responsibility of faculty, staff, and students, all of whom are expected to familiarize themselves with and cooperate with emergency procedures. Emergency Procedures and Safety Information can be found on NEIUportal on the MyNEIU tab or as follows: [http://homepages.neiu.edu/~neiutemp/Emergency_Procedures/MainCampus/](http://homepages.neiu.edu/~neiutemp/Emergency_Procedures/MainCampus/). This “flip chart” is also posted at many locations on campus, including in our classroom. Additional safety information is available on the NEIU Public Safety website: [http://www.neiu.edu/university-life/university-police](http://www.neiu.edu/university-life/university-police)
“Tips for Success in this Course”

First and foremost, it is expected that you will attend class! Discussions in class are key to distinguishing what is important (and what is not!) from text resources. Important information, including any change to the schedule, is given in class; it is your own responsibility to obtain this information. If you do miss class for any reason, make sure that you get notes from someone. I am happy to review with you these notes, to answer any questions, but I cannot be expected to repeat what happened in class, on an individual basis.

You are also expected to check the course web resources regularly. Assignments, due dates, reference materials, and lab worksheets will be made available here; you are responsible for having these when needed.

To do well in this course, you should maximize the effectiveness of your time (in and out-of-class):

1. **Read appropriate chapter(s)/topics or additional resources, particularly noting key terms.** You should focus on putting new terms into context, not on memorizing definitions. Reviewing material related to class discussions will help you to identify questions that you may have.

2. **Ask questions!** In class or out of class, do not hesitate to let me know if you have questions. If you are not comfortable asking questions in class, come to my office and let’s chat! (note my scheduled hours; you may also make an appointment if these times do not work with your schedule)

3. **Take notes, but do not try to copy down everything** that is said! Listen for the main points, and then write down what is important. If you’re not clear as to what the main point is, ask!

4. After class, review material while it’s fresh: go over your notes and compare to information from available resources; make a note of any remaining questions you have (then make sure to ask these questions of me or the tutors!). Don’t wait until just before an exam to sort everything out!

5. **Do assignments** completely, carefully, and punctually! This is one of the easiest ways to earn points toward your final grade. Not completing assignments is a sure way to damage your grade.

6. If you are having trouble, seek help right away. Don’t wait until the end of the term to ask about ‘fixing’ your grade: by then, it’s too late. Let’s work together to identify problems early and work on a solution.

A general rule for college classes is that you should expect to spend 2 hours outside of class for every one hour in class on a weekly basis: this is time spent on assignments, review, studying, etc. The most successful students manage their time this way, and do not rely on “cramming” before exams.

Note that success in this lab class is dependent upon your participation, contributions, and thoughtful effort, especially in connecting concepts. The best grades will be earned by students who are on-time & prepared for class, who fully participate in discussions and activities and thoughtfully complete work as required.

**My Expectations of You (see also “Classroom/ Laboratory Rules”)**

- I understand if occasional circumstances result in late arrival or create the need to leave class early: this is preferable to your missing an entire session. I do expect that you will do your best to avoid such situations: leave yourself enough time to get here, for instance! If necessary, however, please be courteous: do not disturb others as you enter/exit. If tardiness or disruptions are a habit, your grade will be affected.

  **Note that on-time attendance and full participation is critical for success in this class. Late arrival to lab is particularly disruptive and detrimental. Be prompt and be ready to participate!**

- It is not necessary to inform me if you are unable to attend a class session. However, if an exam or assignment due date would be missed, special consideration of extenuating circumstances is only possible if you have notified me in advance (or as soon as possible in case of emergency): email or voice-mail is fine. Excuses are subject to approval; you may be required to provide appropriate documentation. Please note that holiday travel, in conflict with the academic term schedule, is not an extenuating circumstance.

- Plagiarism and other academic misconduct will not be tolerated. This applies to all assignments, projects, exams, and in-class work. Cheating or appearance of cheating may result in a failing grade. Refer to the University Student Conduct Code for definitions and university policy on academic misconduct (available on the NEIU website). For more information about avoiding plagiarism, see additional course web resources.

- Respect for others in the classroom is expected of all class members. See additional information in “Rules.”
1. There is no lab manual for this class. Resources for completing labs will include: ESCI department materials (available in class); handouts supplied by teacher; worksheets & resources available through the course web resources (to be printed for use in class); and your text resources and lecture notes for the class. If you are required to print and bring resources, that information will be posted on course webpage or D2L, *not later than 5 pm on the day before class*. You are expected to check the web resources regularly, and come to class prepared with the needed materials!!

2. Upon arrival in the lab, take out what you will need for class, and store all other belongings (backpacks/ bags, etc.) in the cabinet or under the lab table. During class sessions, instructor and students will be moving around the classroom; anything in the aisles presents a safety hazard and an obstacle. Proper storage allows maximum work space on the lab benches, leaves aisles clear for us to move around, and reduces risk of damage to your possessions.

3. Note-taking on a laptop is not as effective as taking notes by hand, particularly in a lab setting. Using a laptop is allowed only to the extent that it does not interfere with the designated activity. If a laptop is in the way or presents a distraction, be prepared with a “backup plan” for note-taking.

4. Food is not allowed in the lab/classroom. Drinks, in a container with lid, are allowed; however, it is only allowed to the degree that it does not interfere with activities, nor does it pose a risk of damaging any ESCI materials. You are responsible for cleaning up after yourself: dispose of trash in the proper receptacle, and place recyclables in a designated container.

5. ESCI lab materials are for use in the laboratory as directed. These materials are to be treated with care, in the manner directed by the instructor. Any intentional or incidental damage due to misuse of materials or disregard for the rules will result in lowered grade and/or financial obligation.

6. Your safety— and that of others around you— is important to all of us! Follow directions for using materials and equipment; pay close attention to observing any cautions and good scientific practices; and ask if you have any questions! Good lab practice includes following precautions, as instructed, with materials that could pose a hazard; you will be informed about any appropriate cautions and procedures.

7. Some exercises will be completed within the lab period and turned in on the same day; others may require that you complete them outside of the available class time. If a lab exercise is not completed during the allotted class period, materials will be accessible through the ESCI tutoring office (BBH 130) or as directed by the instructor; it is your individual responsibility to make the time to complete the work. ESCI materials are not to be removed from the designated ESCI rooms.

8. Respect for others leads to a positive classroom dynamic:
   - *Silence or turn off* cell phones and other electronic devices for the duration of the class period. Use of such devices in ways that are unrelated to class activities is not respectful to others in the class.
   - Listen when others are speaking, and keep an open mind to consider different viewpoints fairly.
   - If you have a question for me, or a contribution to the discussion, by all means speak up. However, if conversation with others is not part of a class activity, you will be asked to leave. Respect those in class who are trying to listen – or speak. Disruptions in the classroom will not be tolerated.

9. Lab work most frequently will be accomplished through working in small groups or pairs; you will therefore be required to exhibit good team citizenship in this class. “Team citizenship” is about respecting others (see rule #8!), putting forth your best effort, actively participating in the process and contributing to team discussions, and following through on your individual responsibility for your work.
OUTLINE of TOPICS
This schedule of topics is subject to change, as reflected in updates on the course website.
Each student is individually responsible for all information and updates, as provided in class and/or on the website.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPICS</th>
<th>Important Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Jan</td>
<td>Course overview &amp; administration; Earth in Perspective; Exploration of Earth Materials &amp; Maps: the Methods of Earth Science</td>
<td>Assignment 1 due by 10 Jan</td>
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<tr>
<td>15 Jan</td>
<td>Monday - Holiday: Martin Luther King, Jr. Day NO CLASS Exploring Earth Processes, Materials &amp; Systems</td>
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<tr>
<td>22 Jan</td>
<td>Earth Processes and Earth System Interactions Intro to Earth Materials as evidence of earth processes</td>
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<td>29 Jan</td>
<td>Earth surface processes: what we see and the questions we ask</td>
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<tr>
<td>5 Feb</td>
<td>Igneous Rocks; Volcanic Processes and Plate Tectonics</td>
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<tr>
<td>12 Feb</td>
<td>Monday - Holiday: Lincoln’s b-day NO CLASS Behavior of earth materials; deformation and stress</td>
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<tr>
<td>19 Feb</td>
<td>Earth Movements, Mountain Building, &amp; Tectonics</td>
<td>21 Feb - Exam 1</td>
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<tr>
<td>26 Feb</td>
<td>Metamorphism &amp; Deformation: Faulting, Folding, and Plate Boundaries</td>
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<tr>
<td>5 Mar</td>
<td>Shaping the Earth: Weathering and Erosion; Sedimentary Processes</td>
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<tr>
<td>12 Mar</td>
<td>Stream Processes; Erosion and Deposition</td>
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<tr>
<td>19 Mar</td>
<td>SPRING BREAK – NO CLASS</td>
<td></td>
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<tr>
<td>26 Mar</td>
<td>Geologic Time and History</td>
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<td>2 Apr</td>
<td>Oceans and Shorelines; Interpreting Earth History and Changes</td>
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<tr>
<td>9 Apr</td>
<td>Atmosphere, Weather, and Climate; Climate and Weather Patterns</td>
<td>11 Apr – Exam 2</td>
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<tr>
<td>16 Apr</td>
<td>Glaciers and Deserts; Geologic Record of Climate Through Time</td>
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<tr>
<td>23 Apr</td>
<td>Weather Systems, Severe Weather, and Global Climate Issues</td>
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<tr>
<td>30 Apr</td>
<td>(last regular class session) Final Exercise</td>
<td>Final Exercise (exam)</td>
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<tr>
<td>3 May</td>
<td>(scheduled Final Exam period) – No class meeting</td>
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Other Important Dates:

**Please note** both the schedule for the final exam and university policies governing finals.**

No exceptions other than those allowed by this policy will be made.

The final date to drop a course, as per University policy, is Friday, 30 March.
<table>
<thead>
<tr>
<th>Week</th>
<th>Sec 2</th>
<th>Sec 3</th>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9 Jan</td>
<td>11 Jan</td>
<td>Introduction to Earth Materials</td>
</tr>
<tr>
<td>2</td>
<td>23 Jan</td>
<td>18 Jan</td>
<td>Maps, Data, and Scientific Methods</td>
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<tr>
<td>3</td>
<td>30 Jan</td>
<td>25 Jan</td>
<td>Data Interpretation: Earth System Patterns</td>
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<tr>
<td>4</td>
<td>6 Feb</td>
<td>1 Feb</td>
<td>Sedimentary Rocks</td>
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<tr>
<td>5</td>
<td>8 Feb</td>
<td></td>
<td>NO LAB THIS WEEK</td>
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<tr>
<td>6</td>
<td>20 Feb</td>
<td>15 Feb</td>
<td>Igneous Rocks</td>
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<tr>
<td>7</td>
<td>27 Feb</td>
<td>22 Feb</td>
<td>Metamorphic Rocks</td>
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<tr>
<td>8</td>
<td>6 Mar</td>
<td>1 Mar</td>
<td>Brittle Deformation – Faults and Earthquakes</td>
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<tr>
<td>9</td>
<td>13 Mar</td>
<td>8 Mar</td>
<td>Maps and Landscapes (topo maps)</td>
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<td></td>
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<td></td>
<td>Spring Break: 20, 22 Mar</td>
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<tr>
<td>10</td>
<td>27 Mar</td>
<td>15 Mar</td>
<td>Stream Processes</td>
</tr>
<tr>
<td>11</td>
<td>3 Apr</td>
<td>29 Mar</td>
<td>Ductile Deformation – Folds and Mountain Building</td>
</tr>
<tr>
<td>12</td>
<td>10 Apr</td>
<td>5 Apr</td>
<td>Geologic Time and History (order of events)</td>
</tr>
<tr>
<td>13</td>
<td>17 Apr</td>
<td>12 Apr</td>
<td>Interpreting the Geologic Record (changes that took place – sea level, etc.)</td>
</tr>
<tr>
<td>14</td>
<td>24 Apr</td>
<td>19 Apr</td>
<td>Landscape Evidence for Climate Change (glacial landsc.)</td>
</tr>
<tr>
<td>15</td>
<td>1 May</td>
<td>26 Apr</td>
<td>Weather and Climate</td>
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</tbody>
</table>