

## GEOL 2110 Earth History - LECTURE SYLLABUS

**Professor:** Latisha Brengman <http://www.latishabrengman.com>

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**Office Hours:** Mon & Wed 10:00 – 11:00am, or by appt.

**Lecture:** MWF 1:00-1:50 pm in ABAH 235

**Lecture Textbook:** The Earth Through Time (11<sup>th</sup> Ed) by Levin and King, Wiley, 2017.

**Lab:** See lab syllabus for details about lab schedule, TA contact info, etc.

**Course Description:** Topics of discussion and activities will revolve around the history of the planet Earth including the nature and preservation of the geologic record, the origin and evolution of life and how it is preserved in the fossil record, the tectonic evolution of continents and ocean basins throughout geologic time, and the climate history and surface evolution of the planet.

**Attendance:** Mandatory. To be considered an excused absence, the student must contact me prior to missing class. There are no make-up exams or labs for unexcused absences. Late work will only be accepted 1 week after the due date for 50% credit. No make-ups will be accepted for credit after the last day of class, April 27th.

### **Expected course-level student learning outcomes (SLOs)**

Students completing this course will be able to:

1. Recognize the long evolutionary history of the surface of our planet.
2. Identify key events in earth history including those relating to climate, life, and tectonics.
3. Apply fundamental aspects of the scientific method to problems outlined in laboratory exercises.

Students will demonstrate outcomes 1-3 through:

- A. Assignments where students interact to synthesize class discussions/readings in groups.
- B. Laboratory exercises focused on interpreting key events in earth history.
- C. Midterm and final exams.

### **Lecture Schedule and Reading Assignments**

<b>Part I: The Precambrian world</b>			<b>Readings</b>
1/10	W	<u>EH1:</u> Introduction	Chapter 1
1/12	F	<u>EH2:</u> Time Scales of Geological Change	Chapter 2
1/15	M	<i>No class – MLK day observed</i>	
1/17	W	<u>EH3:</u> Development of Geological Concepts – 1	Chapter 4
1/19	F	<u>EH4:</u> Development of Geological Concepts – 2	Chapter 5
1/22	M	<u>EH5:</u> Origin of the Planets	
1/24	W	<u>EH6:</u> Differentiation of the Earth's Spheres	
1/26	F	<u>EH7:</u> How do we know the Age of the Earth?	Chapter 3
1/29	M	<u>EH8:</u> Precambrian Eon 1 – Hadean / Early Archean	Chapter 8
1/31	W	<u>EH9:</u> Precambrian Eon 2 – Hadean / Early Archean	Chapter 8
2/2	F	<u>EH10:</u> Precambrian Eon 3 – Late Archean / Paleoproterozoic	Chapter 9
2/5	M	<u>EH11:</u> Precambrian Eon 4 – Late Archean / Paleoproterozoic	Chapter 9
2/7	W	<u>EH12:</u> Precambrian Eon 5 – Late Archean / Paleoproterozoic	Chapter 9
2/9	F	<u>EH13:</u> Precambrian Eon 6 – Mesoproterozoic	Chapter 9
2/12	M	<u>EH14:</u> Plate Tectonics – Evidence & Theory	Chapter 7

2/14	W	<u>EH15</u> : Fundamentals of Evolution	Chapter 6
2/16	F	<u>EH16</u> : Fundamentals of Stratigraphy	Chapter 5
2/19	M	<u>EH17</u> : Precambrian Eon 7 – Neoproterozoic	Chapter 9
2/21	W	<u>EH18</u> : Precambrian Eon 8 – Neoproterozoic	Chapter 9

**2/23 F EH19: First Midterm Exam Chapters 1 - 9**

**Part II: The Modern (Phanerozoic) world**

**Readings**

2/26	M	<u>EH20</u> : Ediacaran	Chapter 10 / 12
2/28	W	<u>EH21</u> : Cambrian	Chapter 10 / 12
3/2	F	<u>EH22</u> : Ordovician	Chapter 10 / 12

**3/5 -3/9 Spring Break**

3/12	M	<u>EH23</u> : Late Ordovician Period	Chapter 10 / 12
3/14	W	<u>EH24</u> : Ordovician & Silurian	Chapter 10 / 12
3/16	F	<u>EH25</u> : Silurian & Devonian Periods – 1	Chapter 11 / 12
3/19	M	<u>EH26</u> : Silurian & Devonian Periods – 2	Chapter 11 / 12
3/21	W	<u>EH27</u> : Carboniferous & Permian Periods – 1	Chapter 11 / 12
3/23	F	<u>EH28</u> : Carboniferous & Permian Periods – 2	Chapter 11 / 12
3/26	M	<u>EH29</u> : Carboniferous & Permian Periods – 3	Chapter 11 / 12
3/28	W	<u>EH30</u> : Mesozoic Era – 1	Chapter 13 /14
3/30	F	<u>EH31</u> : Mesozoic Era – 2	Chapter 13 /14
4/2	M	<u>EH32</u> : Mesozoic Era – 3	Chapter 13 /14
4/4	W	<u>EH33</u> : Cenozoic Era – 1	Chapter 15 /16
4/6	F	<u>EH34</u> : Cenozoic Era – 2	Chapter 15 /16
4/9	M	<u>EH35</u> : Ice Ages of the Pleistocene Epoch	Chapter 15 /16
4/11	W	<u>EH36</u> : The Dawn of Humanity – 1	Chapter 17
4/13	F	<u>EH37</u> : The Dawn of Humanity – 2	Chapter 17
4/16	M	<u>EH38</u> : Climate Change & Human Evolution	Chapter 17
4/18	W	<u>EH39</u> : Modern climate Change	*various papers
4/20	F	<u>EH40</u> : The Anthropocene Epoch	*various papers
4/23	M	<u>EH41</u> : The Anthropocene Epoch & Sustainability	*various papers
4/25	W	<u>EH42</u> : Review for Final	
4/27	F	<u>EH43</u> : Last day of classes	

**4/30 M Final Exam (12:00 pm - 2:55 pm) 75% Chapters 10-17, 25% Chapters 1-9**

(Reference sheet for final exam times:

[https://docs.google.com/spreadsheets/d/1hv2Z0\\_0dk6\\_omggUhaHXkVlBegEy3d4jMuPLTcaGkR4/edit#gid=1123260098](https://docs.google.com/spreadsheets/d/1hv2Z0_0dk6_omggUhaHXkVlBegEy3d4jMuPLTcaGkR4/edit#gid=1123260098))

**Exams:** The mid-term exam is scheduled for the normal lecture period on **Friday, 2/23** and will cover Chapters 1 – 9. A two-hour cumulative final exam is scheduled for **Monday, 4/30** from 12:00-2:55 PM in the lecture classroom. 75% of the final exam will include new material covered since the mid-term and the other 25% will involve material from the first half of the class. The midterm and final exams will be a combination of multiple choice, fill-in-the-blank and short essay questions. Make-up exams will only be scheduled with a previous arrangement.

**Assignments** including (but not limited to) group-work, reflection, problem sets, writing, interactive multi-media work, or any combination of the above will be given sporadically throughout the week. The goal of such exercises is to help you learn the topics covered in class in an interactive setting (which will in turn help to prepare you for the exams.) These assignments will count for 15% of your course grade. As attendance is mandatory, late or incomplete assignments will be dealt with according to the attendance policy on the syllabus.

### Course Grade Point Distribution:

Professionalism	5	%
Assignments	15	%
Midterm Exam	20	%
Final Exam	30	%
Lab	30	%
	100	%

Link to Academic Calendar: [http://www.d.umn.edu/calendar/academic\\_cal.html](http://www.d.umn.edu/calendar/academic_cal.html)

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**Statement on participation by students with disabilities:** Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class, are encouraged to inform the instructor at the start of the semester. Adaptation of methods, materials or testing may be made as required for equitable participation.

**Statement on student academic integrity:** Academic dishonesty tarnishes UMD's reputation and discredits the accomplishments of students. UMD is committed to providing students every possible opportunity to grow in mind and spirit. This pledge can only be redeemed in an environment of trust, honesty, and fairness. As a result, academic dishonesty is regarded as a serious offense by all members of the academic community. In keeping with this ideal, this course will adhere to UMD's Student Academic Integrity Policy, which can be found at [www.d.umn.edu/assl/conduct/integrity](http://www.d.umn.edu/assl/conduct/integrity). This policy sanctions students engaging in academic dishonesty with penalties up to and including expulsion from the university for repeat offenders.

“...Subd. 1. Scholastic Dishonesty. Scholastic dishonesty means plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, misrepresenting, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis...”

Please refer to the student handbook for information about academic integrity and school policies: <http://www.d.umn.edu/kirby/PDFs/StudentActivitiesHandbook.pdf>

**Statement on student conduct code:** The instructor will enforce and students are expected to follow the University's Student Conduct Code (<http://www.d.umn.edu/assl/conduct/code>). Appropriate classroom conduct promotes an environment of academic achievement and integrity. Disruptive classroom behavior that substantially or repeatedly interrupts either the instructor's ability to teach, or student learning, is prohibited. Disruptive behavior includes inappropriate use of technology in the classroom. Examples include ringing cell phones, text-messaging, watching videos, playing computer games, doing email, or surfing the Internet on your computer instead of note-taking or other instructor-sanctioned activities.

## GEOL 2110 Earth History - Laboratory Syllabus

**Graduate TA:** Andrew Dennison  
**Email:** denni323@d.umn.edu  
**Office Hours:** TBA

**Lab meeting:** 114 Heller Hall (HH114), *\*unless otherwise noted*

Section 002: Mon, 8:00-9:50 am

Section 003: Wed, 8:00-9:50 am

Section 004: Fri, 8:00-9:50 am

**Required Lab Textbook:** *Deciphering Earth History – Exercises in Historical Geology (4th ed.)* by Gastaldo, Savrda, and Lewis, Contemporary Publishing Co of Raleigh, 2006.

**Policy:** Everyone is required to attend and complete each lab every week. Missed labs cannot be substituted by extra credit. Please notify the TA before lab starts if you cannot make it. Labs are due at the beginning of the next lab period.

**Lab Grading:** 10 total labs - each worth 10 points (100 points)

Your lab grade will account for 30% of your final grade in Geol 2110, as described in the syllabus for the lecture portion of this course.

### Lab Schedule and Reading Assignments

#	Dates	Title	Chapter
1	Jan 22, 24, 26	Description and classification of sedimentary rocks	Lab, Ch. 1
2	Jan 29, 31, Feb 2	Interpretation of sedimentary rocks	Lab, Ch. 2
3	Feb 5, 7, 9	*Sedimentary textures (HH 108, computer lab)	Book, Ch. 9, 10
4	Feb 12, 14, 16	*Interpretation of sedimentary textures 1	Book, Ch. 9, 10
5	Feb 19, 21, 23 Feb 26, 28, Mar 2	*Interpretation of sedimentary textures 2 <i>TBD project / activity (will count in your lecture grade assignments)</i>	Book, Ch. 9, 10
	Mar 5-9	<i>Spring break – no lab</i>	
6	Mar 12, 14, 16	Fossil Preservation, Taphonomy, and Evolution	Lab, Ch. 8, 9
7	Mar 19, 21, 23	Early Paleozoic Life	Lab, Ch. 10
8	Mar 26, 28, 30	Later Paleozoic Life	Lab, Ch. 11
9	Apr 2, 4, 6	Mesozoic life	Lab, Ch. 12
10	Apr 9, 11, 13 Apr 16, 18, 20	Cenozoic life <i>TBD project / activity (will count in your lecture grade assignments)</i>	Lab, Ch. 12

\*asterisk indicates lab will be performed in a separate location – we will still meet first in HH 114

Please note that Chapters 3, 4, 5, and 6 from the lab manual will be assigned in class as homework assignments and will count toward the lecture grade assignments.