

**GLY2100C – Historical Geology**  
Course Information Spring 2015

**Dr. Rachel Walters**

**Credits: 4**

**Pre-requisites:** Physical Geology GLY2010C, Environmental and Engineering Geology GLY 2030C or instructor permission.

**Room/Time:** Williamson Hall Rm 202, Tuesday Periods 4-5 (10.40am-12.35pm) and Thursday Period 5 (11.45am-12.35pm).

**Office Hours:** MW 2.00 – 3.30pm or by appointment (email me).

If my door is open you are welcome to ask if I have time to see you and if not, I will arrange a suitable time for you to come back.

**Office:** Williamson 377      **Email:** rlwalters@ufl.edu

**Lab Instructors:** Aldo Rincon (arincon@ufl.edu)  
Christian Provancha (cprovancha@ufl.edu)

**Lab Sections:** 001F (M 7-8), 04D0 (W 3-4)

**Lab Room:** Williamson Hall Rm 215.

**Required Text:** *Evolution of the Earth* by Prothero & Dott. Readings will be given for the 8<sup>th</sup> edition. Due to the proposed structure of teaching and learning in this course, you will find it **extremely difficult** without this text.

**Course Description:**

Evolution of the earth and its life, including the major physical events and evolutionary changes recorded in the geologic past.

**Course Objectives:**

1. Review key introductory geological concepts including: plate tectonics, evolution, stratigraphy.
2. Review/introduce the scientific method and how this is applied in gathering geological evidence. Develop skills for observing, interpreting and analyzing the rock record to tell the geological story.
3. Travel through geological time to understand how major geological events in Earth's history are reflected and recorded in the rock record and the modern landscape.
4. Be able to apply geological skills, knowledge and understanding of key concepts to decide how to approach an unknown area to discover its geological history.
5. Improve communication in a team and life-long learning skills.

The **primary goal** for this course is for you to be able to observe, interpret and analyze the rock record to produce a story of geological events.

**Course Design:**

I will be using a Team Based Learning approach to teach this course. During the first class you will be placed in small teams that will be permanent for the semester. Course

content will be broken into 9 units with assigned readings. Each unit will start with a lecture, followed by assigned readings. You will then be given an Individual Readiness Assurance Test (IRAT) and Team Readiness Assurance Test (TRAT) based on the lecture and readings. These tests will be short and will take the form of multiple-choice questions. The same test will be completed individually and as a team. Pre-test readings are designed to provide you with the base knowledge to understand each topic. Class activities will then focus on conceptual understanding and application of the content through discussion and teamwork. Aspects of the application activities will be handed in for individual and team grading.

**Canvas e-learning Site:**

I will post course materials, schedules, surveys, quizzes, readings, assignments etc. to the Canvas e-learning site: <https://lss.at.ufl.edu/> . Make sure that you check the site and sign up for notifications.

**Expectations:**

I will put considerable effort into this class and therefore, I expect the same from you. It is vitally important that you understand all the major concepts covered. This is an important class for developing geological thinking– you must keep up with readings, class assignments and lab assignments. It will be **impossible to catch up**. I want you to succeed and I am willing and available to help, but I cannot help unless you **ASK FOR HELP**. Please come to me as soon as you start falling behind. If you come to me the day before the final exam it will be too late.

**Class Participation:**

Class participation is very important – you should be actively engaged in answering questions and listening to other answers given. You are also expected to ask questions during class about topics you do not understand. There will always be several other students who will benefit from you asking a question. The more engaged you are, the more you will get out of this class. There will be team-based class activities and peer review will form part of your class participation grade.

**Attendance/Absences:**

You are expected to attend **ALL** classes and labs and do the assigned readings. There is a strong positive correlation between attendance and final grade. Attendance will be taken at random times and will form part of your class participation grade. If you are going to be absent you need to email me **BEFORE** the scheduled class time and provide a subsequent written excuse from a doctor (for illness) or family member (for a death in the family). I expect you to be **on-time** to every class. I understand that sometimes lateness is unavoidable, but I will deduct points from your class participation grade if you are persistently late. If you are late on a test day you will not be given extra time. If you are late/absent for a RAT and provide a written excuse (as above) I will provide a make-up test for the individual grade. Through the online survey (see assessment and grade weightings), the class will decide if absentees will receive the team grade portion of the RAT.

**Late Work:**

Assignments will be due **before** class unless otherwise stated. I will accept late work up to five working days (M-F) after the original deadline with a deduction of 10% for each day i.e. if your work is graded at 90% and it is 3 days late you will received a grade of 60%. After this, **NO** late work will be accepted. You will lose 5% if you hand it in late on

the date due, but before 5pm. Penalties will be determined by 5pm each day. If you have a written excuse from a doctor (for illness) or family member (for a death in the family) AND let me know within a week of the assignment being due, you will not be penalized for late work as long as it is handed in by a re-scheduled date. Make-up exams are highly discouraged, but will be granted if a written excuse is provided.

**Etiquette, Disabilities, Cheating:**

All students are expected to adhere to the student honor code (<http://www.dso.ufl.edu/judicial/honorcode.php>). Cheating and plagiarism will not be tolerated. No texting, calling, radios, MP3 players, emailing or social media-ing during class. I will deduct points from your class participation for persistent offenders! Please show courtesy to our instructors and classmates by turning up on-time and leaving on-time (not early) and avoiding unnecessary disturbances during class. Students with disabilities requesting classroom accommodation should contact the instructors as soon as possible to discuss appropriate accommodations. The Dean of Students Disability Resource Center website is <http://www.dso.ufl.edu/drc>.

**Assessment and Grade Weighting:**

There will be 8 short multiple-choice Individual Readiness Assurance Tests and Team Readiness Assurance Tests (RATs, same tests for Individual and Team) near the beginning of each unit. There will be one individual mid-term exam and an individual final exam. There will be 8-10 individual application assignments and 4-5 team application assignments (you will given class time to complete these). All tests and exams will be closed book and closed phone. Team grades for tests and assignments will be the same for each team member.

Grading Criteria:

Four major performance areas will determine your grade: **Individual Performance, Team Performance, Class Participation and Labs.**

Grade Weights:

<b>1. Individual Performance</b> (min. 30%, max. 50%)	.....	
<b>a) Individual Readiness Assurance Tests</b> (10% min.)	.....	
<b>b) Individual Assignments</b> (10% min.)	.....	
<b>c) Class Mid-Term</b> (10% min.)	.....	
<b>d) Final Exam</b> (50% min.)	.....	
		Individual Performance Total: 100%
<b>2. Team Performance</b> (min. 10%, max. 20%)	.....	
<b>a) Team Readiness Assurance Tests</b>	.....70%	
<b>b) Team Assignments</b>	.....30%	
		Team Performance Total: 100%
<b>3. Class Participation</b> (min. 10%, max. 20%)	.....	
<b>a) Attendance</b>	.....40%	
<b>b) Peer Review</b>	.....60%	
		Class Participation Total: 100%
<b>4. Labs</b>	.....	...30%...
		<b>Total: 100%</b>

### Setting Grade Weights:

Grades listed with minimum grades (for major performance areas and within the Individual Performance sub-sections) will be determined by an online survey during the fourth week of class. An average of votes will be calculated to decide grade weightings.

In addition to setting grade weights, in the online survey you will be asked what you would like to do in the event of a team member missing all or part of a team test. The options are award them 0%, 25%, 50% or 75% of the team grade with additional caveats that they let you know in advance. If a student provides me with a written excuse from a doctor or a family member they will be awarded the team grade.

### Peer Review:

There will be three periods of peer evaluation – one after units 1-3, one after units 4-6 and one at the end of the course. Each individual will evaluate the contributions of all the other team members by assigning an average of 10 points to the other team members. For example, a member of a 6-member team will have 50 points to distribute to the other member of their team. Limitations are that you must differentiate between your point assignments. You must give at least one score of 11 (max. 15) and at least one score of 9 or lower. Individual peer review scores will be the average of points awarded by all the other team members. Therefore, you cannot help everyone in your team get an A by giving everyone high scores. The only way for everyone in the team to earn an A is by doing an outstanding job on all the individual and team tests and assignments.

### Determination of Final Grades:

Raw scores will be weighted according to the grade weights for each performance area as set out in the grade weighting section including the decisions made by the class online survey. Final course grade will be based on an individual's standing in the overall distribution of total individual scores in the class. There is no limit to the number of A's earned in this class, but the mean grade will be placed in the B category. There will be no down grading. Letter grades are as follows:

A=93% or above, A-= 90-93%, B+=87-90%, B=83-87%, B-=80-83%, C+=77-80%, C=73-77%, C-=70-73%, D+=67-70%, D=63-67%, D-=60-63%, E=<60%.

**Syllabus is subject to change – including the number of assignments and grading.**

### **Unit #1 Information**

#### **Unit #1: Basic Geological Concepts & Early Earth**

Minerals, rocks (igneous, sedimentary, metamorphic, rock cycle and plate tectonics).  
Early Earth evolution and differentiation, origin of the hydrosphere and atmosphere.

**Unit #1: RAT – Tuesday 13<sup>th</sup> January at 10.40am**

<b>Unit</b>	<b>Description</b>	<b>Reading</b>
<b>1</b>	<b>Basic Geological Concepts &amp; Early Earth</b> Minerals, rocks (igneous, sedimentary, metamorphic, rock cycle and plate tectonics.	103-148;
<b>2</b>	<b>Geological Time and the Geologic Record</b> Review of the geological time scale, dating methods, stratigraphy, fossils and the development of geological theories.	26-34,41-101
<b>3</b>	<b>Precambrian and Early Life</b> Hadean, Archean and Proterozoic Earth history, formation of the atmosphere and hydrosphere, origin of life, Laurentia, supercontinents and Proterozoic life.	149-202
<b>4</b>	<b>Paleozoic Part 1</b> Cratons and mobile belts, paleogeography, evolution of North America, Sauk Sequence, Tippecanoe Sequence, Appalachian Mobile Belt and the Taconic Orogeny.	205-255
<b>5</b>	<b>Paleozoic Part 2</b> Paleogeography, evolution of North America, Kaskaskia Sequence, Absaroka Sequence, Mobile Belts, Acadian Orogeny. Gondwanaland. Invertebrates and the Permian Mass Extinction.	257-346
<b>6</b>	<b>Mesozoic</b> Breakup of Pangea, Coastal Regions, Terrance Accretion. Invertebrates, Plants, Reptiles, Birds and Mammals.	349-409
<b>7</b>	<b>Cenozoic Part 1</b> Paleogene and Neogene, Alpine-Himalayan Orogenic Belts, Circum Pacific Orogenic Belts, North American Cordillera, Continental Margins	411-459
<b>8</b>	<b>Cenozoic Part 2</b> Quaternary, Pleistocene and Holocene tectonism, Stratigraphy, Ice Age and Glaciation, Mammals, Marine Invertebrates, Vegetation and Climate and Birds.	461-495

**All readings and unit topics are subject to change as the class progresses.**

**Classes Canceled:**

<b>Spring Break</b>	<b>March 3<sup>rd</sup> &amp; 5<sup>th</sup></b>
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**Structure field trip: TBD**

**Possible Mid-term Exam date (subject to change):**

**Tuesday, February 24th**

**FINAL EXAM – Cumulative and mandatory; Wednesday, April 29<sup>th</sup>, 10:00am – 12:00 pm**