Geology of Wyoming—nearly 4 billion years of Earth history

GEOL 4050, Instructor: A. W. Snoke (snoke@uwyo.edu)
Class meetings: MWF, 11:00–11:50 pm, Engineering Building, Room 3106
Office hours: M: 2:00–3:00 pm, W: 2:00–3:00 pm, Th: 2:00–3:00 pm or by appointment.
Note: Assigned readings are on the University Libraries e-reserves.

Recommended reference:


General references:


Love, J. D., Christiansen, Ann Coe, and Ver Ploeg, A. J., 1993, Stratigraphic chart showing Phanerozoic nomenclature for the State of Wyoming: Geological Survey of Wyoming MS-41. (This chart is very useful for sorting out the complex Phanerozoic stratigraphic nomenclature of Wyoming.)

Snoke, A. W., Steidtmann, J. R., and Roberts, S. M., eds., 1993, Geology of Wyoming (2 volumes + map pocket): Geological Survey of Wyoming Memoir No. 5, 937 p. (This set was reprinted in 2002, and now is available in soft-back cover with a CD containing all oversized foldout plates. Please see Mr. Brendon Orr in the S.H. Knight Geology Building, Room 135, if you wish to purchase a set of these volumes.) Please note that the purchase of these volumes is NOT required by the instructor—all pertinent papers from these volumes are available in the Brinkerhoff Earth Resources Information Center.


Note: In regard to the reading assignments, an "*" indicates a primary reading assignment. Thus, please put your emphasis (and time) on such an assignment and read/browse the other recommended readings as time is available. We will discuss the primary reading assignments in class.

August 27th – Overview of the course and a brief introduction to the geography and geology of Wyoming.
**August 29th** – Development of the Archean craton (Wyoming Province).

**Reading assignment:**


**August 31st** – no class—Annual Rocky Mountain Field Trip (GEOL 4060) in progress.

**September 3rd** – no class—Labor Day—national holiday.

**September 5th & 7th** – *Continuation* of the development of the Archean craton (Wyoming Province).

**September 10th, 12th, and 14th** – Early Proterozoic accretion to the Wyoming Province.

**Reading assignment:**


**September 17th** – Middle Proterozoic magmatism and other Proterozoic events.

**Reading assignment:**

**September 19th, 21st, and 24th** – Paleozoic stratigraphic framework.

Reading assignment:


**September 26th** – Finish up lecture material (if necessary) and review/questions regarding Test #1

**September 28th** – Test #1.

**October 1st & 3rd** – Early Mesozoic stratigraphic framework.

Reading assignment:


**October 5th & 8th** – Western Interior Cretaceous basin.

Reading assignment:


**October 10th and 12th** – Foreland fold-and-thrust belt (Sevier orogenic belt).

Reading assignment:


**October 15th, 17th, and 19th** – Foreland Laramide-style deformation.

Reading assignment:


**October 22nd and 24th** – Green River Formation—A Middle Eocene lake system.

Reading assignment:


**October 26th** – Finish up lecture material (if necessary) and review/questions regarding Test #2.

**October 29th** – Test #2.

**October 31st and November 2nd** – Absaroka volcanic province.

Reading assignment:


*Below is an interesting set of short papers on the interpretation of the depositional environment of the Yellowstone “fossil forests”—a good example of scientific debate.*


**November 5th and 7th** – Heart Mountain detachment.

Reading assignment:


**November 9th and 12th** – Cenozoic stratigraphy and tectonics.

Reading assignment:


November 14th and 16th – Geomorphic evolution of Wyoming, especially late Cenozoic exhumation.

Reading assignment:


November 19th – Glacial geology of Wyoming.

Reading assignment:


November 21st & 23rd – no class, Thanksgiving Break.

November 26th – Evolution of the Teton Range and Fault.

Reading assignment:


**November 28**th — Finish up lecture material (if necessary) and review/questions regarding Test #3.

**November 30**th – Test #3.

**December 3**rd, 5**th**, & 7**th** – Yellowstone magmatism and tectonics.

Reading assignment:


**FINAL EXAMINATION** *(Comprehensive): December 14**th, 10:15 pm–12:15 pm.*

**Grading:** There will be three tests during the semester (see above for the dates of these tests—these dates are fixed). There will also be an optional comprehensive final exam. On the last day of class (December 7**th**), your test #3 will be returned to you and at that time you will know your final grade based on the three tests during the semester. If you wish to accept that grade, you are not required to take the comprehensive final exam. If you wish to improve your grade, you can take the final exam (December 14**th**, 10:15 pm–12:15 pm—this is the only time that the final exam will be offered). The comprehensive final exam will be a 100-point exam—just as the three tests during the semester. I will take your three highest scores (on the three tests and final exam; 3 out of 4) to calculate your final grade. Thus even if you do worst on the final exam than any of the “during semester” tests, your final grade for the course will not be impacted (i.e., lowered). If you choose not to take one of the three “during semester” tests, you must take the comprehensive final exam.
Statement on Academic Dishonesty: Academic honesty is expected, and dishonesty will not be tolerated and can lead to expulsion from the College and University. Both the University and College have websites discussing this in detail. Uniregs can be found at: http://www.uwyo.edu/legal/Uniregs/ur802.htm. The college policy is at:http://www.uwyo.edu/a&s/Appeals_Dishonesty/Guidelines_Dishonesty.

Statement on Learning Disability: If you have a physical, learning, or psychological disability that requires accommodations, please let me know as soon as possible. You will need to register with, and provide documentation of your disability to: University Disability Support Services (UDSS) in SEO, room 330 Knight Hall, 766-6189, TTY: 766-3073.