

Geography 525: Seminar on Paleoclimate & Global Change Fall 2020 Syllabus

Instructor:

Instructor: Dr. Anna Klene
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Office hours: Thursdays, 2-3:30 pm, & by appt.

Course objectives:

By the end of this course, you should know the major controlling factors of climate through time, be familiar with paleoclimate reconstruction methods, be able to discuss the range of impacts of climate on previous civilizations, and evaluate our current climate situation and solutions.

Moodle:

Access the login page from UM's homepage. Enter your NetID and password. Zoom meeting links, readings, and other materials will be posted there. Check there for readings and videos to complete before each class.

Schedule:

Week	Tuesday Topic	Thursday Topic
Week 1	Aug. 18 – Orientation No Classes	Aug. 20 – Introduction & Climate Review <i>R: 1 & 2</i>
Week 2	25 – Methods <i>R3: Archives, Data & Models</i>	27 – Planetary Evolution <i>R4 & SciNews Article</i>
Week 3	Sept 1 – Tectonic-Scale Chg & Snowball Earth Video & <i>R5 & Hoffman & Schrag</i>	Sept. 3 – Last 100 Million Years <i>R6 & 7</i>
Week 4	8 – Orbital-Scale (Milankovitch Cycles) <i>R8 & article</i>	11 – Glacial Responses <i>R9 & EPICA article & Cowie 4.6.1</i>
Week 5	15 – Migration, DNA Analysis, & Climate <i>Forster, Etc.</i>	17– Last Glacial Maximum, ~21000 yBP <i>R13 & Cowie 4.6.4 **Paper Topic Due**</i>
Week 6	22 – Deglaciation after 20,000 yBP <i>R14 & Strong & Hills paper</i>	24 – Pre-Clovis: Anzick, Coastal sites, etc. <i>Goebel, & news articles</i>
Week 7	29 – Ice Ages, Oceans, & Y. Dryas, 12kya <i>Broecker & Denton articles</i>	Oct. 1 – Collapse: Past Societies <i>Prologue & Montana & Okonski & Rebuttal</i>
Week 8	Oct. 6 – The rise of Ag & Cities, ~10kya <i>TBA</i>	8 – Mid-Holocene Dust Event, 5200 yBP <i>Linden Chps & Davis & Thompson & Oetzi</i>
Week 9	13 – Harappan, 4000 yBP <i>TBA</i>	15 – The Anthropocene: 1860, 5kBP or more? <i>R16 & Ruddiman, 2005 & Cowie 4.6.4b</i>
Week 10	20 – Climate since 1000 <i>R17 & Thompson Pop. Press Articles</i>	22 – MWP & LIA – <i>Zhang et al., Kerr, & Büntgen et al., Tan et al., & B1</i>
Week 11	27 – Mongols & Climate, ~ 1200AD <i>TBA</i>	29 – Collapse: Greenland Norse – 1000 to 1500 AD <i>Chp. 6, 7, & 8</i>
Week 12	Nov. 3 – Election Day No Classes	5 – SA: Either Tiwanaku, Moche, or Inca <i>DeMenocal et al, etc.TBA **Paper Outline Due**</i>
Week 13	10 – Last 2000 yrs of Drought in US – & <i>Cook et al. (only pg 93-116, 132)</i>	12 – Jamestown – 1600 <i>Stahle et al, etc.</i>
Week 14	17 – Year Without A Summer – 1816 <i>Oppenheimer article</i>	19 – Exams **Papers Due Friday by 5pm**
Week 15	Exams period = Presentations	Thanksgiving Holiday

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Coronavirus:

Please refer to <https://www.umt.edu/coronavirus/default.php> for the latest information and policies on masks, distancing, and available services on campus.

Required assignments and tests:

Reading Assignments – The required reading assignments form the basis of class discussion in seminars. Typically, at least one chapter and often 2 lengthy readings will be assigned for each class.

Student-led Discussions – Almost every day, one student will be assigned to provide a handout summarizing the main points of that reading and to lead a discussion. The handout and discussion leadership will be graded.

Term Paper – Each student will prepare a paper on some topic related to global change. It is recommended the topic be a potential thesis project or cover a subject that may be useful for future employment. The paper will be an ~8 to 10 page literature review. It is important not just summarize the literature, but also evaluate the different sources as an essential component of the scientific process.

Class Presentations – All students will give a presentation on their paper. This presentation (~ 6 min.) will review the student's topic, findings, and major conclusions. All of these presentations should be well planned, well-illustrated, and given in a formal manner. Grading will reflect the presentation as well as the content.

Participation – A participation grade will be given for days with discussions and reflect how much the student contributed to the discussion. Completing the readings and watching assigned videos is expected prior to class. This is not an attendance grade however, so in the case of a family emergency, please see the instructor.

Course guidelines and policies:

Student Conduct Code – UM's student conduct code is clearly addressed at: <https://www.umt.edu/student-affairs/community-standards/default.php>. Students failing to follow the code will be reported to the proper offices and receive a failing grade for the course.

Disability modifications – UM assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact DSS in Lommasson Center 154 or call 406.243.2243. I will work with you and DSS to provide appropriate modification.

Important Dates:

Sept. 9: Last day to drop/add in Cyberbear with partial refund or change to "Audit".

Oct. 21: Last day to drop with drop/add link in Cyberbear (w/ prof & advisor sigs), \$10 fee, and "W" grade.

Nov. 18: Last day to drop with drop/add link (w/ prof, advisor, & dean sigs), \$10 fee, and "WP" or "WF" grade.

Grading:

At the end of the course, the distribution will be examined and letter grades assigned at approximately: A=>90%, B=80-90%, C=70-80%, D=60-70%, etc. The "+/-" grading system will be used. ***There will be no extra credit of any kind.***

Student-led Discussions	70 (35 pts × 2)
Participation	30 – based upon comments made during each class discussion
Paper Topic & Descrip.	10
Paper Outline	10
Final Paper	60
<u>Paper Presentation</u>	<u>20</u>
Total	200 pts.

*** This syllabus may be modified as necessary during the course. Ask the instructor if you have any questions about when materials are due.