

**MIT-WHOI JP Course 12.708 / SAW Course # WH.404**  
**Topics in Paleoclimatology**

Fall, 2019

**Instructors:** Alan Condron (WHOI, Clark 276, x2630, acondron@whoi.edu)  
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**Class Times:** TBD

**Places:** TBD

**Course Website:** <https://www.whoi.edu/sbl/liteSite.do?litesiteid=11318>

**Course Description:** We designed this seminar class to supplement the more formal classes offered in the MIT-WHOI Joint Program (JP). Each year, we read and discuss classic and new papers from an important topic in Paleoceanography and Paleoclimatology. Because the typical graduate student is in the JP for approximately 5 years, we return to some key topics every 5 or so years. Some topics are covered more frequently, often with a change in focus from a previous year. Each week, a student presents an important paper and then leads a discussion of the paper. All other students are expected to contribute to the class by formulating questions and by participating to the discussion. Our more recent topics and references are available on the course website.

**Topic of Fall 2019:** The topic of the course for Fall 2019 will be the study of rapid climate changes, i.e., changes of climatic variables over time scales ranging from several decades to several millennia. We will discuss papers based on property records from natural archives (e.g., polar ice cores and marine sediment cores) as well as on ocean/climate models. The first class will be a broad introduction to the subject by the instructors. For subsequent classes, the course will proceed as described above.

**Text/Readings:** Reading assignments will be made available online for each class. Several relevant textbooks will also be placed on reserve. Examples of relevant textbooks are referenced at the end of this document.

**Grading:** Class size is typically small, and so class participation is an important component of learning in this course. A given student is expected to present several papers during this course. Grading for this class is based on (i) participation in class and (ii) quality of the oral presentations:

Class participation	50%
Oral presentation	50%

**Credits:** 9 credits (MIT-JP Students)  
1.5 credits (SAW Students)

### **Recommended Textbooks**

(on reserve in Lindgren Library, Building 54, MIT, and in Clark 237, WHOI)

Bender M., *Paleoclimate*, Princeton Primers in Climate, Princeton University Press, 2013

Bradley R., *Paleoclimatology – Reconstructing Climates of the Quaternary*, 3<sup>rd</sup> edition, Academic Press, 2015

Imbrie J. and Imbrie K., *Ice Ages – Solving the Mystery*, Harvard University Press, 1979

Vallis G., *Climate and the Oceans*, Princeton Primers in Climate, Princeton University Press, 2012