

**SUNY Cortland  
Department of Geology**

**GLY 529 –Special topics  
MASS EXTINCTIONS**

**Spring, 2011**

Credit Hours: 3	Instructor: Dr. Christopher A. McRoberts
Lecture: WED 4:20-6:50 PM (occasional) & online	Office: 337 Bowers Hall
Location: Bowers Rm. 339	Phone: 753-2925
Web: <a href="http://paleo.cortland.edu/class/gly529/">http://paleo.cortland.edu/class/gly529/</a>	E-mail: <a href="mailto:mcroberts@cortland.edu">mcroberts@cortland.edu</a>
	Office Hours: TU: 2-4, WE: 2-4

**Required Texts**

- Hallam, A. 2005. *Catastrophes and Lesser Calamities: The Causes of Mass Extinctions*, Oxford University Press, 240 p.
- Additional required readings will be made available in digital format from the course website.

**Course Overview (Mass Extinctions):**

Mass extinctions have played a central role in the long-term evolutionary patterns of life. While the extinctions vary tremendously in size and scope, each represents a resetting of sorts where ecological niches are newly created or newly occupied. This course will examine both the methods of study of mass extinctions and specific extinction events from a paleontological standpoint (e.g., what died? what are the possible causes?).

**Course Objectives and Assessment (Mass Extinctions):**

This is a reading and participation intensive course. Students will be expected to read more than 100 pages per week. Students will be required to participate in on-line discussions based on weekly readings and usually provide typed 1-page essays either on the readings or other assigned topics. Students will also write a somewhat larger (about 10-15 p.) term paper and make a presentation based on their paper. There will be two take-home essay exams (a mid term and the final).

Upon completing this course students will have an understanding of methods used in studying mass extinctions by the fossil record by using existing global fossil databases and data from individual stratigraphic sections. The student will be able to help determine patterns and

process of extinction events to understand the causes of extinction. In addition, the student will examine in detail case studies of the five largest of mass extinctions learning which groups of organisms suffered high extinctions rates and possible mechanisms of extinction.

### **A Hybrid Online/Lecture Course**

This is a hybrid course with portions of the course conducted online and other portions taking place as traditional lecture course in the classroom. For the online portions, interaction between students and the instructor is via the Internet in an asynchronous manner meaning that the class members do not all need to be logged in at the same time. Although many elements of the course will be conducted online, it is **not** a *self-paced* course. Students need to interact with each other in a timely fashion.

### **Technology Requirements**

**An internet connection** (preferably broadband). Students will need to be on-line every several times a week and have the ability to download and upload course content and assignments. Some of the digital content files may be big (+10 MB) or streaming video.

**Web browser.** Make sure your web browser is up to date. For Windows I recommend Firefox (v. 2.0 or higher) or Microsoft's Internet Explorer (v. 7 or higher), for a Mac, Safari (any version) or Firefox v. 2 (or higher) would be fine.

**An active email account.** Much of the correspondence will be delivered through email. It is important to have a reliable email account that you can access on a daily basis and have the ability to receive and send attachments.

**Video playback software.** You will need to have the ability to download and view video podcasts (vodcasts). These will likely be large files and will be in a format that can be viewed in Apple's **QuickTime** or **iTunes**. Both software products are available for free download from Apple's website <http://www.apple.com>. Note: the vodcasts will be in a format that can also be played on the newer generation iPods (iPod 5 gen with video, and the newer iPod Classic, iPod Nano (3 gen), iPod Touch, and the iPhone).

**Additional software.** Many of the files I will send you (or you will download) will be in pdf (portable document format) and you will need to have the ability to open them. Adobe provides the free Acrobat Reader reader to view pdf documents which can be downloaded from <http://www.adobe.com>. I would prefer also to receive documents in the pdf format as well. You will need a word processor. Microsoft Word (for Window's or Mac) will do as would several other open source programs that can be obtained for free and can save files as .pdf, .doc, or .docx. Please note: I will **NOT** accept files made with other programs such as WordPerfect (.wp).

## Required Field Trip

There is a required all day field trip scheduled for **Sunday April 17**. We will depart from Bowers Hall at **8:00 AM sharp** and return by 7:00 PM in the evening. During the field trip we will investigate fossiliferous rock exposures in western New York in which one of the major mass extinction events are preserved.

## Attendance Policy:

You are expected to attend all lectures on the scheduled dates, attend the field trip, and participate online in a timely fashion. Although attendance *per se* will not be part of your grade assessment, participation as prescribed above is.

## Grading:

Exam 1	15%
Exam 2	20%
Weekly write-ups	20%
Paper and Presentation Project	30%
Participation and Discussions	15%
Total	100%

## Course Outline & Lecture Dates

January 26:	Introduction and historical review
February 2:	<b>Online:</b> Quality of the fossil and stratigraphic record
February 9:	<b>Online:</b> Databases and Global patterns of mass extinction
February 16:	<b>Online:</b> Global patterns of mass extinction continued
February 23:	<b>Online:</b> Periodic extinctions?
March 2:	<b>Online:</b> Causes of Extinction I: Extraterrestrial causes
March 9:	<b>Online:</b> Causes of Extinction II: Earth-bound causes
March 23:	Recovery from mass extinctions
March 30:	Case Study—The End-Ordovician
April 6:	Case Study—The Late Devonian
April 13:	Case Study—The End-Permian
April 20:	Case Study—The End-Triassic
April 27:	Case Study—The End-Cretaceous
May 4:	Case Study—The 6 <sup>th</sup> extinction

## **Students with Disabilities**

If you are a student with a disability and wish to request accommodations, please contact the Office of Student Disability Services located in B-40 Van Hoesen Hall or call (607) 753-2066 for an appointment. Information regarding your disability will be treated in a confidential manner. Because many accommodations require early planning, requests for accommodations should be made as early as possible.