



**Biology 6 – Dinosaurs!
Winter 2015
201 Life Science Center
10A (Tuesday, Thursday 10:00-11:50 PM, Wednesday 3:00 –3:50 PM)**

Instructor: Prof. Kevin J Peterson
Office Location: 321 LSC
Email: kevin.j.peterson@dartmouth.edu
Office Phone: 646-0215
Office Hours: Monday 2:00-3:00

Course Description

See the ORC.

Course Goals

My primary goal for you is to understand that science is done by scientists, with all their wisdom and ignorance, their curiosity and arrogance, their passion and their indifference. In other words, science is a human endeavor undertaken by people fascinated by the world in which they find themselves, but stricken with the malady of humanness. Appreciating this fact will better allow you to evaluate science and scientists, and ultimately (I hope!) foster your curiosity and intelligence, and allow you to discern the important distinction between science and non-science. My secondary goal is for you to learn about some of the most fascinating animals to have ever walked this planet, and to rekindle our collective fascination with dinosaurs, the face of extinction, and the abyss of Deep Time.

My goal for myself is to continue to learn and to be challenged from the brightest and most well rounded undergraduates that I've ever encountered.

Pre-Requisites

None.

Teaching Methods and Teaching Philosophy

I generally use a Socratic method of teaching. Classes consist of lectures punctuated often by questions posed by me to the class. Please feel free to contribute to these discussions by volunteering answers. Also please feel free to ask questions at any time – either for clarification or for further discussion.

Expectations

As adults you pick and chose how much work you will put into this course, what lectures you will attend, and what readings you will do. However, if you want to do well in this class it is imperative that you attend lecture. Background readings are less important, but will supplement what is discussed in class, and will give you a different perspective on the material. I also hope that you contribute to the class discussions and ask and answer questions. I find that in doing so students get used to the types of questions I find interesting, and hence do better on the exams. I expect you to treat yourself, myself and your peers with respect, so for example turn your cell phones off during class, do your own work, come to class on time etc.

You can expect from me that readings will be posted at least a week in advance, that lectures will be posted by 10 AM the day of class, and quizzes and exams will be written fairly and with the aim to challenge your knowledge and intelligence. Please note that this is NOT a “gut” class – quizzes exams are difficult, but I think in the end you will be proud of your performance on these exams.

Text and Resources

This course is on Dartmouth’s Canvas site. There you will find this syllabus, the PowerPoint presentations, the readings, and the homework questions. To access it go to the aforementioned website and use your blitz username and password.

There is no required textbook for this class. Instead, pdfs of required readings will be posted on Canvas (in the “Files” folder).

Grading

There will be three quizzes, with each quiz taken during the X hour, and two examinations, a midterm examination taken during a scheduled class period, and a final exam taken on the scheduled day. Each quiz is worth 10% of your grade, and the midterm and the final are each worth 35% of your grade. Homework is not graded. Of course, the Honor Principle applies to all work in this course (see below). There will be 100 total points that can be earned, and in the past the median value has been an 80 out of 100, which I have used as the cutoff between a B and B-. If you earn over a 90 you are guaranteed at least an A-, and if you earn below 50 you will receive an E. Between those values grades are somewhat fluid, and I use natural breaks to set boundaries between grades.

Academic Honor

Students are encouraged to work together to do homework problems. Homework is not graded, and will not be collected. With respect to examinations, you are required by the Principle of Academic Honor to answer questions completely on your own without the use of notes, papers, books, electronic devices etc. It is best if you only bring to class the day of the exam a writing utensil and nothing else. I will be present during the exam only to answer questions – I assume that as Dartmouth undergraduate you will be abide by *both* Dartmouth’s Academic Honor Principle as well as your own. To me, cheating on an exam on dinosaurs (of all things) is essentially an admission to yourself that you do not belong here at Dartmouth College.

If you have any questions as to whether some action would be acceptable under the Academic Honor Code, please contact me either directly or through email.

Course Schedule

<u>Meeting</u>	<u>Topic</u>
Introduction and Basic Concepts	
1/6	Lecture 1. History of Dinosaur Discoveries
1/8	Lecture 2. Dinosaur Discovery in Space and Time – Rocks, Fossils and Deep Time
1/13	Lecture 3. Evolution and Natural Selection
1/14	X hour. Discussion Reading
1/15	Lecture 4. Evolution and the Fossil Record
1/20	Lecture 5. Cladistics and Phylogenetic Reconstruction
Taxonomic Survey	
1/21	X hour. Quiz #1 – Lectures 1-4
1/22	Cladistics Tutorial
1/27	Lecture 6. Origin of Dinosaurs; Ornithischians and Thyreophorans
1/28	X hour. Quiz #2 – Lecture 5
1/29	Lecture 7. Ornithopods and Intersexual Selection
2/3	Lecture 8. Marginocephalians and Intrasexual Selection
2/4	X hour Midterm Review Session
2/5	Midterm Examination – Lectures 1-7
2/10	Lecture 9. Sauropods and Inferring Life Habit(at)s
2/11	X hour Midterm Discussion Session
2/12	Lecture 10. Theropods and the Assembly of the Avian Body Plan
Dinosaur Biology	
2/17	Lecture 11. Physiology and Inferences of Endothermy
2/19	Lecture 12. Reproduction and Growth
2/24	Lecture 13. The Biology of <i>T. rex</i>
2/25	X hour. Quiz #3 – Dinosaur Phylogeny
2/26	Lecture 14. Dinosaur Evolution through Space and Time – Plate tectonics and Biogeography
3/3	Lecture 15. Pterosaurs
3/4	X hour Speed and Strength Tutorial
3/5	Lecture 16. Mass Extinction: The Cretaceous/Paleogene Cataclysm
3/10	Lecture 17. Mass Extinction: The K/Pg Aftermath and the Rise of Mammals
3/11	X hour Final exam review session
3/14 (11:30)	Final Examination – Lectures 8-16

Student Needs

Students with disabilities enrolled in this course and who may need disability-related classroom accommodations are encouraged to make an appointment to see me before the end of the second week of the term. All discussions will remain confidential, although the Student Accessibility Services office may be consulted to discuss appropriate implementation of any accommodation requested. *Student Accessibility Services* (<http://www.dartmouth.edu/~accessibility/facstaff/>)

Additional Support for your Learning

Academic Skills Center (<http://www.dartmouth.edu/~acskills/>)

The Academic Skills Center is open to the entire Dartmouth Community. Here are some common reasons why you might visit the ASC:

You're getting B's but you want to get A's

You don't feel comfortable talking in class

You're attending class regularly but you feel like you're missing important points

You feel like you're a slow reader

You're having trouble completing tests in the allotted time

You're spending hours studying for foreign language but still not "getting it"

You feel like you don't have enough time to get everything done

You're not sure how to take notes

You want to sign up for a tutor or study group

You're not sure if you should get tested for a learning disability

The Research Center for Writing, and Information Technology (RWiT)

(<http://www.dartmouth.edu/~rwit/>)

The Student Center for Research, Writing, and Information Technology (RWiT) is a place where you can meet with an undergraduate tutor to discuss a paper, research project, or multi-media assignment. The RWiT tutors are trained to help you at any phase of your process. Whether you are brainstorming or planning, drafting or structuring, tweaking or polishing, the RWiT tutors can provide feedback that will help you to create final products of which you can be proud.