

BIO 115/215 – Dinosaurs & Paleontology – Spring 2023

Instructor: Dr. Ian N. Cost
Office: Science 239
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Email: icost@albright.edu
Office Hours: Monday 11-12:50
Tuesday 10:30-12:50 or by appointment

Course Description:

This course explores the history of dinosaurs and paleontology. Dinosaurs have long captured our imagination, but how did they come to be? What made them such a diverse and successful group of animals? We will explore the history of the Earth leading up to dinosaurs and the events that led to the evolution of these charismatic giants. Additional topics that will be discussed include phylogenetics and systematics, paleoecology, paleobiology, evolution, extinction, popular culture, biomechanics, and fossil preservation. Students will also learn basic techniques of modern paleontology in preparation for a summer trip (the lab portion of the course) during which they will travel to Montana to excavate fossils. During this lab portion students will use knowledge gained in class to locate, identify, and excavate fossils from the Cretaceous period (~66MYA).

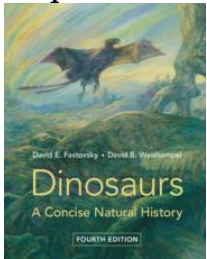
FOUNDATIONS-NATURAL SCIENCE

Note: for Natural Science Foundations requirement, students must complete both BIO 115 and BIO 115L. For 215/215L: Course Prerequisites: BIO152

Student Goals and Class Objectives:

1. Gain knowledge in a fields of natural science and to have a basic scientific literacy.
2. Start to experience hands-on laboratory or field experimentation and/or practice formalized observation.
3. Develop problem solving abilities though scientific inquiry (the scientific method), quantitative reasoning, and empirical observation of natural phenomenon.
4. Work toward being able to communicate scientific information using an appropriate scientific style.

Required Texts: Assigned readings will be provided on Canvas throughout the semester.



Fastovsky, D. E., Weishampel, D.
B. 2021. **Dinosaurs: A Concise Natural History. (4th Ed.): Cambridge University Press.**

1. Readings will also be assigned instead of the book for some classes and will be provided on Canvas.
2. **Note:** Earlier editions (1st – 3rd) of this textbook may be used; however, the student will be responsible for differences.
3. In the course schedule the book is referred to as “DCNH”.

Attendance:

The course grade includes participation based on attendance and discussion. Due to the fact that class is held once a week, points for attendance are strictly adhered to. Students who attend every class will earn the full 100 points. If a student misses one class, they will earn 80 points. If they miss a second class, they will earn 50 points. Missing three or more classes will result in no credit for the attendance portion of the grade.

Class Discussions and Professionalism:

Class discussions will be conducted respectfully and professionally. We will use proper terminology to discuss topics. Each student is expected to be respectful of their peers and to hold everyone, including me, responsible for properly addressing students by their chosen names, pronouns, and respective titles and using proper terminology in discussions. If any student wishes to discuss class discussion, content, or any other aspect of class with me they are welcome and encouraged to do so. If you feel uncomfortable speaking with me for any reason, I encourage you to contact the [Office of the Dean of Students](#) with your concerns.

Diversity, Equality, and Inclusion in this Course:

Much of recorded science is subjective and has been historically based on the ideas and hypotheses of a collection of privileged voices. The readings in this course are based in part on the work done by this small and privileged group of individuals that were, and mostly still are, white men. We will discuss research and work done by scientists that have subsequently, some quite recently, been recognized as leaders in the field of paleontology that do not identify as white men. Should you come across any contributions to this field that you think we ought to

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incorporate into our coursework or simply wish to discuss the merits of in light of this topic, please feel free to contact me in person, via email, or anonymously (by leaving a note either under my office door or in the building secretary's office on the third floor).

My expectations are that we will be a learning community that appreciates the successes, struggles, and skill sets that we each bring to this class and that we will learn from one another. This course will be a learning environment that is comfortable for students to explore dinosaurs and paleontology. It is within that goal that this course will support and enrich student learning by using diverse learning styles in classroom discussions, promoting individualized thinking styles, honoring each student's perspectives and experience, and by being respectful of all members of our learning community.



Grading:

Deadlines are given below in the course calendar but will also be communicated in class. If an accommodation, illness, or other event causes a student to require a flexible deadline for any assignment, then the student must reach out prior to the due date (sudden illnesses – COVID, accidents, etc. – should be communicated as soon as reasonably possible). Flexible deadline requests are entirely the responsibility of the student; reach out to me with the length of extension you need so that we can discuss how to make sure your work is completed in a timely manner.

If a student is interested in an honors module for this course I ask that they please contact me within the first two weeks of class so that we can plan appropriately.

Class Participation (Attendance):

Students are expected to attend each class. Participating in the discussions during each class are the only requirements to earn points for participating. Participation looks different for each student. **100 Pts.**

Quizzes:

Quizzes assessing student knowledge of the material covered in each unit of study will be taken prior to the start of the preceding unit. We will grade these quizzes during class. Late arrival will be considered on a case by case basis, but without a valid excuse this will result in a 0 on that day's quiz. **10 Pts. each (100 total)**

Research Papers:

All students are expected to write a research paper for this class. This paper will require significant effort and time to craft and will be worked on throughout the semester. All drafts and paper materials will be submitted through Canvas and will be subjected to examination through SimCheck/Turnitin. Any suspected plagiarism will be dealt with as outlined below under **Academic Integrity**.

Students will choose a family or genus of dinosaurs and discuss their relevant ecology, evolutionary history, and general anatomy. This paper will rely on primary sources and students are expected to properly cite information in the text and in a bibliography at the end of the paper. Students will be given a summary of expectations for the paper during the first class. Topics for the paper will be due during the 4th week of class with an initial annotated bibliography compiled by the 6th week of class. A first draft (**NOT** rough) will be due during the 7th week of class. During the 10th week of class we will discuss peer review and scholarly articles. During this time students will submit a second draft, which will be peer reviewed. Students will have 3 weeks (due the 13th week of class) to review their assigned paper and attach constructive comments at which point they will be submitted to the instructor, returned to the author, and a final copy will be due the date of the final exam. Drafts are worth 50 points total (25 points each first and final), peer review is worth 35 points, the topic is worth 5 points, and the initial bibliography is worth 10 points. **100 Pts. total**

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Final Presentation:

The final exam period will be used to present short summaries of each student's research paper in a miniature research conference. Student presentations will last approximately 10 minutes and may include short PowerPoint presentations. Students should prepare a short handout to summarize their work. Student grades will be assigned by committee; all students will grade each other and student input will factor into the final grade for the presentation. Students may ask questions of the presenter, time permitting. **100 Pts.**

Grading:

The point breakdown for the course will be as follows:

Class meetings	- worth 100 points
Quizzes	- worth 100 points
Research Paper (All Aspects):	- worth 100 points
Final Presentation:	- <u>worth 100 points</u>
	Total 400 points

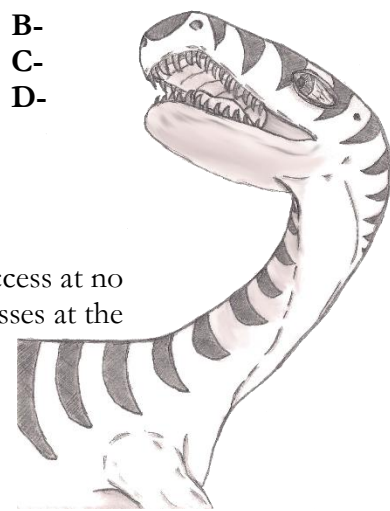
Grading Scale for Final Grades in This Class:

>98	A+	93-98	A	90-92	A-
87-89	B+	83-86	B	80-82	B-
77-79	C+	73-76	C	70-72	C-
67-69	D+	63-66	D	60-62	D-
		<60	F		

Academic and Health Support Services:

Academic Learning Center:

The ALC offers various resources to assist Albright students with their academic success at no charge. The ALC offers course-specific peer tutoring for many general education classes at the 100-200 level. You can schedule to meet with a peer tutor in person or online by selecting the [‘ALC Subject Tutor Schedule’](#). Peer tutoring takes place in the ALC Subject Area Tutoring Lab located in the outdoor tunnel near Jake's Place. The ALC also offers one-on-one academic coaching for upper class students on study skills, time management, note-taking, and learning strategies. (The Office of Student Success offers academic coaching for first-year students.) To schedule an academic coaching meeting with a staff member in the ALC, contact by phone at 610-921-7662 or [by email](#). The ALC main office in Teel Hall 309A.



Writing Center:

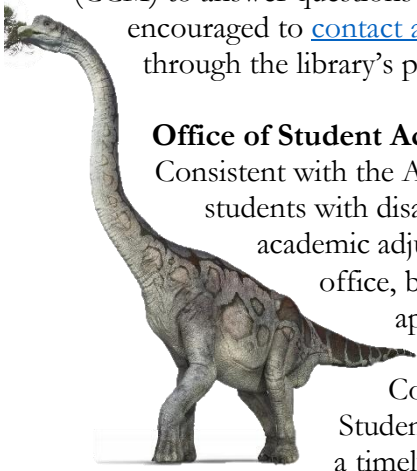
You are encouraged to visit the Writing Center early and often throughout the semester to help build a strong foundation for writing in this course and in all of your courses. In-person and online sessions are available. The center's peer tutors and director will work with you at any stage of the writing process, from developing and organizing ideas to revising and editing drafts. Rather than editing your work for you, writing tutors will actively engage you in meaningful conversations about your writing and help you learn new strategies. Tutors are also available to discuss approaches to managing the college reading workload and reading more effectively. The center is located in Jake's Place near the mailroom and can be reached at 610-921-7540 (phone) or [by email](#). (Note: For Fall 2021, the Writing Center will be in Teel 309-B until the Campus Center construction is completed). For the current schedule or to make an appointment for an in-person or online session, use our [appointment system](#).

Gingrich Library:

The [Gingrich Library](#) provides resources to assist Albright students with their class projects and research needs. Library materials include books, e-books, print and electronic journals, databases and DVDs. All students have complete access to the Gingrich Library catalog, electronic books, and its electronic databases from on-campus, in residence halls or off-campus. Reference librarians are available in the Center for Computing and Mathematics

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(CCM) to answer questions and help students use resources and find appropriate materials. Students are encouraged to [contact a librarian](#) at any stage of the research process. Real-time chat services are available through the library's portal at the library's main page. The portal to the library can be [reached from here](#).



Office of Student Accessibility and Advocacy:

Consistent with the ADAAA and Section 504 of the Rehabilitation Act, Albright College welcomes students with disabilities into the college's educational programs. If you need impairment-related academic adjustments in this course, please contact the Student Accessibility and Advocacy office, by email at SAA@albright.edu or by phone at 610-921-7503. Our online application and is available in the student health portal. SAA staff are available to help with the application if requested. The SAA office is in the Student Center Conference Room. Students should contact the office to schedule an appointment. Students who use accommodations should meet with course instructors privately and in a timely manner to discuss their Academic Accommodation Letter (AAL). *Please note that*

IEPs and 504 plans do not apply to college-level courses. Student AALs may be printed from the student health portal. Students should contact the SAA office if they need assistance retrieving their letters.

Academic Integrity:

The College policy on dishonesty as stated in the section "Academic Dishonesty Policy" in the current Albright College Catalog applies to all aspects of this course, including exams and papers. Academic dishonesty is taking credit for another person's work and attempting to pass it off as your own. It includes: 1) copying from another student during exams and quizzes; 2) allowing someone to copy from you or providing someone with a copy of your work that results in plagiarism; 3) Presenting someone else's ideas as your own without express permission and crediting them; 4) Plagiarizing (copying) material from books, articles, and electronic sources for direct use in your work; 5) using cheat sheets, notes, cell phones, etc. to gain outside information during a test or quiz. A student charged with academic dishonesty will be given written or oral notice of the charge, will receive an F on the assignment in question, and the case will be referred to the Provost. At the Instructors' discretion, the student may receive an F for the course. Repeat offenses, in one class or different classes can lead to more severe penalties (e.g. academic dismissal). Please familiarize yourself with this policy.

Classroom Recording Policy:

The audio or visual recording of class lectures, discussions, simulations, and other course-related activity by either students or instructors is governed by the College's class recording policy, available in the Catalog. Albright's policy on class recording balances the needs of students who are differently abled, the intellectual property concerns of its instructors, and the privacy of its students. Any audio or visual recording made by a student during a class, regardless of the recording device, requires the instructor's written consent prior to the class and the student's signed agreement with the terms of the College's policy. Prior to a student recording of any class activity, the student and the instructor must sign a recording agreement and file it with the Office of Student Accessibility and Advocacy (if the recording is an approved disability accommodation) or with the Academic Dean's office (if not an accommodation). Violations of this Class Recording Policy may be directed through academic dishonesty procedures or the Office of Community Standards, and could involve civil or criminal violations.

Mental Health Matters:

The [Gable Health and Counseling Center](#) offers students the chance to meet with therapists at no charge. Students are encouraged to make appointments to receive confidential care for small and large issues. If you, or anyone close to you on campus, are suffering from any mental health issues, you are encouraged to reach out and use the services on campus to get the care you need. The office is open from Monday through Friday 8:30am - 4:30pm and appointments are scheduled from 10-6 M-TH and 9-5 on Fridays. Students can set up a meeting with a therapist on campus by walking to the Gable Health Center located on campus at 1829 Linden Street or by calling the Gable Health Center at 610-921-7532.



Class	Topic	DCNH Readings	Canvas Readings	Work Due
1/26	Preservation, Fossils, and Paleontology I	Ch. 1		Pre-Quiz
2/2	The “birth” and “prime” of paleontology	Ch. 16		Quiz
2/9	History of Earth up to the Mesozoic	No Readings	Module 2	Quiz
2/16	Archosauria: Flying reptiles	No Readings	Module 3	Paper Topic Due
2/23	Archosauria: Swimming reptiles	No Readings	Module 3	Quiz
3/2	Dinosaur anatomy and physiology	Ch. 13		Bibliography Due
3/9	Ornithischian Dinosaurs	Ch. 10 - 12		First Draft Due, Quiz
3/23	Ornithischian Dinosaurs	Ch. 10 - 12		Quiz
3/30	Ornithischian Dinosaurs	Ch. 10 - 12		Peer Review Draft
4/6	Saurischian Dinosaurs	Ch. 7 - 9		Quiz
4/13	Saurischian Dinosaurs	Ch. 7 - 9		Quiz
4/20	Saurischian Dinosaurs	Ch. 7 - 9		Peer Review Due
4/27	Mesozoic Mammals	No Readings	Module 7	Quiz
5/4	Extinction at the KPg Boundary	Ch. 17		Quiz
Final	Final Presentations			Final Paper Due



The logo features the words "LAB SCHEDULE" in a large, stylized, red-outlined font. On either side of the text are white silhouettes of a dinosaur's head and neck, facing each other.

All lab activities will occur in the field during the summer trip

Day	Topic	Work Due
1	Onsite introduction to field paleontology – Jordan, MT	
2 - 13	Time at dig site applying principles of paleontology – Jordan Mt.	Daily recaps
14	Recap and packing – Jordan, MT	
15	Travel back to Reading, PA	Student summaries of field experience due 1 week after return.

