

# ***Prehistoric Life***

## **SNC210/SW259 (Online Asynchronous Course)**



### **Syllabus**

**Version: *Winter 2022***

***Kevin F. Downing Ph.D.***

**Instructor**

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### **Course Description:**

#### ***Description***

This course promotes students' investigation of fossils to interpret the character of 3.5 billion years of biological evolution and ecological change on earth. By way of scientific reasoning, mathematical inference, and applicable technologies, emphasis is on the exploration of earliest evidence of life, development of multi-celled plants and animals, dinosaur evolution, mass extinction events, mammal diversification, human origins as well as appraisal of the societal reliance on fossil resources and the persistent debate over evolution versus creation. Learning is assessed through labs, a fieldtrip, video summaries, contributions to online discussions, and a research paper in a scientific format.

#### ***Learning Experience***

This online course progresses through 10 paleobiology-themed modules that employ a combination of readings (text and scholarly articles) and multimedia resources (archived online videos, Paleontology Society Portal websites, and National Science Digital Library multimedia). Corresponding laboratory exercises and analytical video reviews alternate every other week with laboratory exercises employing fossil specimen kits, online 3D virtual fossils, online paleontology databases, as well as online simulations of natural selection and the history of life. Students are required to participate in weekly online discussions that reinforce module concepts and student critical thinking through original contributions and collaborative responses to classmates. Students undertake a structured self-directed fieldtrip to a natural history museum (e.g., Field Museum) or an actual fossil site to conduct an original study centering on a paleontological hypothesis. Students also complete an original inquiry research paper following a scientific format.

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## Instructor Information:

*Kevin F. Downing*, Professor – DePaul University

Dr. Downing is a Professor at DePaul University’s college for adult learners, School of Continuing and Professional Studies. His research interests include the investigation of fossil mammals, fossil corals, and online science learning practices. He is the author of numerous publications in geology, paleontology and science education and is the co-author of the book, *Online Science Learning: Best Practices and Technologies*. Dr. Downing received B.S. degrees in Astronomy and Geology (University of Illinois-Champaign), an M.S.T. in Geology (University of Florida- Gainesville), and Ph.D. in Geosciences (University of Arizona, Tucson).

## Instructional Materials:

### **Required Textbooks:**

Tattersall, I. (2010). *Paleontology: A brief history of life*. West Conshohocken, PA: Templeton Press.

Palmer, D., Lamb, S., Gavira, G. A., Frances, P., & DK Publishing, Inc. (2009). *Prehistoric life: [the definitive visual history of life on earth]*. New York, N.Y: DK Pub.

Books available at <https://depaul.bncollege.com/> or through discount outlets (Amazon, Abes etc.)

**Additional scholarly articles may be made available as e-reserves at:**

<https://library.depaul.edu/services/Pages/Course-Reserves-Services.aspx>

### **Required Lab Resource:**

Fossil Kit:

“What are Fossils? How do Fossils Form?” from the General Fossil Collection, available for purchase through [geology.com](http://geology.com). (approx. \$17.00).

## **Additional Resources:**

**Core Videos:** (embedded in course, no purchase required):

Prehistoric Earth: A Natural History (Before the Dinosaurs: Walking with Monsters / Walking with Dinosaurs / *Allosaurus* / Walking with Prehistoric Beasts / Walking with Cavemen (2008)/ and Planet Dinosaur (2011)

**Course Website.** The complete *Prehistoric Life* course guide, course learning materials, discussion forums, and additional resource links including supplementary videos are available through the course management system, [D2L™](#).

**Writing Resources.** DePaul offers a comprehensive suite of services for students to assist in their writing activities through the [University Center for Writing-based Learning \(UCWbL\)](#). In particular, students may request an appointment with Writing Tutors to get detailed feedback regarding an assignment such as their research paper.

**Recommended reading (not required):**

Cowen, R. (2013). *History of life*. Chichester: Wiley-Blackwell.

## **Course Learning Outcomes**

### ***General Learning Outcomes:***

Upon successful completion of this course, all students are expected to have demonstrated:

- A basic working definition and knowledge of the science of paleobiology.
- An understanding of the historic connections between physical and biological factors governing earth's biodiversity.
- An understanding of the major trends and patterns of biodiversity through earth history.
- An understanding of humanity's evolution as expressed in the fossil record of primates.
- An ability to analyze information generated from scientific investigations in paleontology.
- An understanding of how institutions support the exploration and archiving of earth's biological history and serve as places of scientific learning.
- A working understanding and applied use of scientific reasoning.

### ***Liberal Studies Program Learning Outcomes - Scientific Inquiry***

This course will enable students to achieve learning outcomes for the Scientific Inquiry Domain (SID) and the Liberal Studies Program goals of *reflectiveness* and *creative and critical thinking skills*. The table below summarizes these outcomes.

<b>Category</b>	<b>Learning Outcome</b>

<b>Scientific Inquiry-Elective (SI-Elective 1)</b>	Students will be able to apply appropriate concepts, tools, and techniques of scientific inquiry.
<b>Scientific Inquiry-Elective (SI-Elective 2)</b>	Students will be able to describe how natural scientific, mathematical, and/or computational methodologies function as mechanisms for inquiry.
<b>Scientific Inquiry-Elective (SI-Elective 3)</b>	Students will be able to explain the interaction between the content of their SI-Elective course and other scientific disciplines or the broader society.

The following table describes how Liberal Studies Scientific Inquiry Learning outcomes will be fostered and demonstrated by students in *Prehistoric Life*.

<b>Learning Outcome</b>	<b>Demonstration</b>
<b>Scientific Inquiry-Elective (SI-Elective 1)</b>	<p>Paleontology is a hybrid science that applies mathematics (especially statistics) and draws technologies from a variety of other sciences and engineering fields to address research questions. The readings and supporting materials in <i>Prehistoric Life</i> demonstrate the evolution of our knowledge of earth's past biodiversity including how this view has been improved by successive waves of technology improving the accuracy and precision of tools that are routinely employed by paleontologists.</p> <p>Students in <i>Prehistoric Life</i> will be introduced to and gain an appreciation for technologies that contribute to discerning fossil chronology (radiometric dating, chronostratigraphic dating,) isotope geochemistry (e.g., analysis of carbon cycles in fossil record as a proxy for climate), mechanical modeling (establishing biomechanical properties of the anatomy of extinct organisms), simulations (establishing the motion of extinct mammals through computer simulations), computer analysis (using parsimony statistics to establish phylogenetic relationships), CT scans to analyze concealed fossil structures, and DNA analysis of extinct organisms.</p>

<p><b>Scientific Inquiry-Elective (SI-Elective 2)</b></p>	<p>Students will be able to describe how fossil and other natural history data collected from sites around the world can be employed to inquire about the patterns and processes of life through geologic time.</p>
<p><b>Scientific Inquiry-Elective (SI-Elective 3)</b></p>	<p>In readings and course multimedia, students will regularly consider how the field of paleontology contributes broadly to human concern such as its impact on understanding the evolution of life on earth, the character of extinction, global environmental change over long durations, transformation of physical geography and the corresponding origin of resources such as oil, coal and natural gas.</p> <p>This course makes detailed use of multimedia and articles from approachable and enduring online resources such as the Paleontology Portal and the National Science Digital Library (NSDL). Likewise, interesting weekly stories (“this week in earth history”) are linked on the D2L site under ‘news’ so students can read popular reports about the latest paleontology findings. This learning strategy of incorporating popular resources to compliment the course texts and other course materials fosters an ongoing and lifelong appreciation of paleontology and science.</p>

## Other Learning Outcomes

<p><b>Liberal Studies Program Outcomes</b></p>	
<p><b>Reflectiveness:</b></p>	<p>The exploration of prehistoric life raises and bears upon some of the most profound philosophical and metaphysical questions that can be pondered by humans. How did life begin? What are the evolutionary factors producing the human lineage? Are humans a ‘special’ species? Will humans inevitably become extinct like other past species and if so, what is the meaning of our existence? Is there a human purpose beyond survival? Are the conditions of the past earth unique or could the origin of life be ubiquitous in the universe? In the <i>Prehistoric Life</i> course and particularly through the vehicle of online discussion assignments students are directed to consider how the paleontological perspective has been produced and how it is (or is not) reshaping their own view of these quintessential questions. The meta-level learning outcome of this reflection is for the students to gain a keener appreciation for their own existence.</p>

<b>Critical and creative thinking:</b>	The Prehistoric Life course advances the development of critical thinking skills and explores methods of formal inquiry as preparation for lifelong independent research. The course research paper is a key activity to foster critical and creative thinking with its emphasis on generating and evaluating a novel hypothesis based on the review of up-to-date scholarly literature. Students must find a 'gap' in our current knowledge of a subject and find a creative means (e.g., methodology) to contribute to closing the gap. In this way, Prehistoric Life promotes a broader perspective of research and innovation to solve problems.
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## **SCPS Program - Course Learning Outcomes**

**FOR CREDIT-HOUR BASED DEGREE PROGRAMS (BAPS-Business Admin; BAPS-Computing; BA-Healthcare Admin; DCM etc.)**

**Students will accomplish the general learning outcomes for the course as well as the LSP and outcomes described above.**

### **FOR SCPS STUDENTS IN COMPETENCE-BASED DEGREE PROGRAMS ONLY**

The following SCPS competencies are offered through the Prehistoric Life course:

S1B	S2X	S3D	S4	S5
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**The above competencies will be developed as outlined in Table I below.**

## **Learning Strategies, Deliverables, and Assessment Approaches:**

Students will be assessed through a variety of approaches in *Prehistoric Life* including online discussions, lab reports, a research paper, video summaries, a geologic time exercise, and a fieldtrip report.

**Discussions.** (200 points). Each module of the course has its own discussion forum for a total of 10. Discussion forum questions are formulated by the instructor to motivate student interaction and reflection around that week's topics. An excellent response is considered 1) accurate, 2) original, 3) relevant, 4) teaches classmates something, 5) clearly incorporates information from the readings and/or other learning materials, and 6) is well written. Excellent responses add substantial teaching/learning presence to a course and stimulate additional thought about the topic under discussion

**Lab Reports.** (250 points). In alternating modules of the course, students undertake lab activities structured to reinforce paleobiology principles and scientific reasoning. The first lab on fossil preservation and common fossil groups has students analyze specimens from a uniform fossil kit to sharpen observation and categorization skills. In Lab 2, students develop multiple

models for how echinoid species originated and then analyze their natural selection by synthesizing data of species morphology, biogeography, ecological characteristics, stratigraphy and chronology. In Lab 3, students develop and test a hypothesis about paleoecology through the statistical analysis of fossil preservation features in rock specimens and comparison with known characteristics of depositional environments. In Lab 4 students make predictions about the food niche of extinct mammal groups based on dental characteristics and their correlation to food source type. Lastly, in Lab 5, students assess published models for human evolution based on comparison and measurement of fossil skull features as represented by virtual 3D models.

**Research Paper Description and Final Draft.** (250 points). Students are provided detailed guidelines for writing a scientifically formatted research paper. Early in the course they are required to submit their research question and approach whereas their final draft is due near the end of the course. An excellent research paper has the following qualities: 1) the research question is original and relevant; 2) paper adheres to the required scientific format; 3) resources are scholarly and relevant; 4) scholarly information is integrated and synthesized; 5) citations are of proper format and used consistently; 6) information is evaluated reasonably and critically; 7) corresponding conclusions are consistent with preceding information and arguments.

**Video Summaries.** (75 points). Students are required to review, evaluate, and reflect on videos that reinforce module topics. An excellent video summary has the following qualities: 1) a summary of the key concepts presented, 2) specific examples (e.g., fossils, species, habitats, etc.) 3) a statement of how this learning helped in gaining a better understanding of the module topic as well as observed weaknesses in the presentation, and 4) the summary is well written.

**Geologic Time Exercise.** (25 points). Students apply appropriate mathematical formulae to evaluate rock ages and geologic time.

**Museum or Fossil Site Field Trip Report.** (200 points). Students will undertake a scientific investigation using a natural history museum or fossil site. An excellent report has the following qualities: 1) statement of research question and observations, 2) specific examples of what was observed (e.g., species, habitats, theories, principles, etc.), 3) sound results and conclusions, 4) reflection on the results of the learning activity, and 5) information is accurately communicated and report is well written.

## Summary of Assignments, Point Values, and Percentages

Grading Category:	Number of Assignments	Point Value Each	Total Point Value	% of Final Grade
Discussions	10	20	200	20%
Lab Reports	5	50	250	25%
Research Paper (Description)	1	50	50	5%
Research Paper (Final)	1	200	200	20%
<b>Video Summaries</b>				
Video Summaries	5	15	75	7.5%
<b>Geologic Time Exercise</b>				
Geologic Time Exercise	1	25	25	2.5%
<b>Museum or Fossil Site Field Trip Report</b>				
Museum or Fossil Site Field Trip Report	1	200	200	20%
<b>Total</b>			<b>1000 Points</b>	<b>100%</b>

## Writing Expectations

To assess student learning, the *Prehistoric Life* course incorporates several forms of writing assignments including laboratory reports, a research paper following a scientific journal format, video summaries, weekly online discussions, and a self-directed museum fieldtrip report. There are 5 laboratory reports on the topics of Fossil Preservation, Origin of Life, Paleoecology, Mammal Biodiversity, and Human origins each of which incorporate worksheets that serve as the template to collect and analyze data and a summary/conclusion section in essay format. The required research paper follows a science journal format and has a length of 2500+ words. Five video summaries at 300 words each are submitted on a standardized form centering on video case examples and student reflection. Students are also required to submit a self-directed fieldtrip report that is structured in a scientific format involving testing a hypothesis through observations and data collection via a museum exhibit. Finally, students' weekly discussions conducted online require original written contributions based upon course materials as well as collegial responses with other students around their submissions.

Each writing assignment type above has a detailed set of instructions and assessment rubric which is provided to students in the *Prehistoric Life* course guide. All writing assignments are expected to conform to basic college-level standards of mechanics and presentation.

## Grading Policies and Practices including Late Work:

To complete the course, students must fulfill each of the assignments as described in the course and submit them to the instructor by the assigned deadline. In addition, students must participate in the course discussion forum by responding to all instructor requests and by interacting with fellow classmates as necessary. Points will be deducted for late work that has not been exempted with the instructor (i.e., for medical or significant personal reasons).

**Course Grading Scale for *Prehistoric Life***

Grading Scale	Percentage	Verbal Descriptor
A	100-93%	Excellent
A-	92-90%	
B+ -> B-	89-80%	Very Good
C+ -> C-	79-69%	Satisfactory
D+ -> D-	68-60%	Poor
F	< 60%	Unacceptable

## DePaul University Rubric for Letter Grades

- A** The instructor judged the student to have accomplished the stated objectives of the course in an EXCELLENT manner.
- B** The instructor judged the student to have accomplished the stated objectives of the course in a VERY GOOD manner.
- C** The instructor judged the student to have accomplished the stated objectives of the course in a SATISFACTORY manner.

- D** The instructor judged the student to have accomplished the stated objectives of the course in a POOR manner.
- F** The instructor judged the student NOT to have accomplished the stated objectives of the course.
- IN** Temporary grade indicating that, following a request by the Student, the Assistant Dean for Student Affairs and the Instructor have given permission for the student to receive an incomplete grade. In order to qualify, the student must have:
1. satisfactory record in the work already completed in the course;
  2. encountered unusual or unforeseeable circumstances, which prevent him/her from completing the course requirements before the end of the term; and
  3. applied to the instructor and to the Assistant Dean for permission to receive the IN. The incomplete will expire at the end of the following semester. If the work is not complete, the student will receive a failing grade.

### ***Pass/Fail Exclusions***

You may not use the [Pass/Fail](#) grading option if you are using this course to meet Liberal Studies Program (LSP) requirements. Likewise, if this course is taken to meet a requirement in your major (including intended and pre-majors), minor, and/or certificate (including intended and pre-minors/certificates) you may not use the Pass/Fail option.

***Incomplete (IN) Grade:*** This process follows university [policy](#).

A student who encounters an unusual or unforeseeable circumstance that prevents her/him from completing the course requirements by the end of the term may request a time extension to complete the work.

- The student must formally initiate the request by submitting the [Incomplete Contract](#) form (via email, word doc), no later than week 10 (or prior to the final week of a shorter-term course).
- The instructor has discretion to approve or not approve the student's request for an IN grade.
- The instructor has discretion to set the deadline for completion of the work, which may be earlier but no later than two quarters (not counting Summer term).
- The instructor may not enter an IN grade on behalf of a student without a completed and agreed upon contract.
- The student is alerted that IN grades are not considered by Financial Aid as evidence of satisfactory academic progress.

### **Rubrics**

#### **Discussion Forum Rubric**

The instructor expects that students will contribute to discussions each week. For online discussions, the instructor uses the rubrics described below (modeled after Pelz, 2004). Take this into consideration as you prepare and participate in class discussions.

Level	Interpretation	Character of the Contribution
4	Excellent	The comment is 1) accurate, 2) original, 3) relevant, 4) teaches us something, and 5) is well written (where posted online). Four-point comments add substantial teaching presence to a course and stimulate additional thought about the issue under

		discussion. Likewise, a response to another student's postings should also have these qualities.
3	Above Average	The comment lacks at least one of the above qualities, but is above average in quality. A level 3 comment makes a significant contribution to our understanding of the issue being discussed.
2	Average	The comment lacks two or three of the required qualities. Comments which are based on personal opinion or personal experience are often within this category.
1	Minimal	The comment presents little or no new information. However, level 1 comment may provide important social presence and contribute to a collegial atmosphere.
0	Unacceptable	The comment adds no value to the discussion.

### Lab, Video Summary, and Fieldtrip Report Rubric

Level	Interpretation	Character of the Contribution
4	Excellent	The report summarizes addresses and/or has the following qualities: 1) Your observations (what you observed and/or read about during your learning activity). 2) Specific examples of what you observed (e.g., species, habitats etc.) 3) How this learning helped you to gain a better understanding of the course topic. 4) The theories, principles and information reviewed. 5) and information is accurately communicated and report is well written.
3	Above Average	The report lacks at least one of the above qualities, but is above average in quality. A level 3 report demonstrates a strong understanding of the issue being discussed.
2	Average	The report lacks two or three of the required qualities. A level 2 report demonstrates a reasonable understanding of the issue being discussed.
1	Minimal	The report presents little evidence of the above qualities. A level 1 report demonstrates a nominal understanding of the issue being discussed.
0	Unacceptable	The report does not demonstrate understanding of the fieldtrip topics.

### Research Paper Rubric

Level	Interpretation	Character of the Contribution
4	Excellent	Research question is original and relevant Research question addresses competence(ies) sought in course Paper adheres to the required scientific format Resources are scholarly and relevant Scholarly information is integrated and synthesized Citations are of proper format and used consistently Information is evaluated reasonably and critically Corresponding conclusions are consistent with preceding information and arguments Report is well written (grammar, flow and spelling)
3	Above Average	The paper lacks at least one of the above qualities, but is above average in quality. A level 3 report demonstrates a strong understanding of the issue being discussed.
2	Average	The paper lacks two or three of the required qualities. . A level 2 report demonstrates a reasonable understanding of the issue being discussed.
1	Minimal	The paper presents little evidence of the above qualities. A level 1 report demonstrates a nominal understanding of the issue being discussed.
0	Unacceptable	The paper does not demonstrate understanding of the topic.

## General Assessment Criteria for All Writing Assignments

All writing assignments are expected to conform to basic college-level standards of mechanics and presentation.

Consider visiting the Writing Center to discuss your assignments for this course or any others. You may schedule appointments (30 or 50 minutes) on an as-needed or weekly basis, scheduling up to 3 hours' worth of appointments per week. Online services include Feedback-by-Email and IM conferencing (with or without a webcam). All writing center services are *free*.

Writing Center tutors are specially selected and trained graduate and undergraduate students who can help you at almost any stage of your writing. They will not do your work for you, but they can help you focus and develop your ideas, review your drafts, and polish your writing. They can answer questions about grammar, mechanics, different kinds of writing styles, and documentation formats. They also can answer questions and provide feedback online, through IM/webcam chats and email. Obviously, the tutors will not necessarily be familiar with every class or subject, but they are able to provide valuable help from the perspective of an interested and careful reader as well as a serious and experienced student-writer.

Schedule your appointments with enough time to think about and use the feedback you will receive. To schedule a Face-to-Face, Written Feedback by Email, or Online Appointment, visit [www.depaul.edu/writing](http://www.depaul.edu/writing).

## News Items and Discussion Forums

Discussion Forums are an important component of your online experience. This course contains discussion forums related to the topics you are studying each week. For requirements on your participation in the Discussion Forums, please see "Discussion Forum" and the "Discussion Rubric" in this syllabus.

A Course Q & A discussion forum has also been established to manage necessary, ongoing social and administrative activities. This is where the management and administrative tasks of the course are conducted, and where you can ask 'process' questions and receive answers throughout the course from the instructor or other students.

Information Area Title	Appropriate Activities
News	Periodically, the instructor may make general postings and updates to course materials (beyond regular updates).
Forum Title	Appropriate Activities
Introductions	A place to tell us a little about yourself and your connection to the course subject matter.
Course Question and Answers	A place for students to ask process questions about the course activities.
Module Discussion Forums	The place to exchange observations and ideas about course topics. Answers and Responses to these forms are assessed and factor into your grade.

## **Course and Workload Expectations:**

### ***Workload, Time Management, and Attendance***

This online course is not self-paced and requires a regular time commitment each week throughout the quarter. Students are required to log in to the course at least four times a week so that they can participate in the ongoing course discussions. Online courses are no less time consuming than onsite courses. Students will have to dedicate some time every day or at least every second day to their studies. A typical four credit hour onsite course with a lab component at DePaul involves 6 hours of onsite learning. In addition, students can expect to spend at least three to six hours of study and homework per week. Therefore, to work towards an excellent grade in *Exploring Earth's Physical Features*, students should expect to commit at least 10 hours of time spread out through each week of the quarter.

### ***Discussion Forums***

Discussion Forums are an important component of a student's online experience. This course contains discussion forums related to the topic(s) students are studying each week. A Course Q & A discussion forum has also been established to manage necessary, ongoing social and administrative activities. This is where the management and administrative tasks of the course are conducted, and where students can ask 'process' questions and receive answers throughout the course.

### ***Course Netiquette***

Online discussions are an important part of the course experience. To ensure a positive learning environment, students should follow the guidelines below:

- Be polite
- Respect other participants' views or opinions
- Think before you write, and ask yourself if you would say the same thing in person
- Use positive phrases (i.e., "Good idea!" or "Thanks for the suggestions," etc.)
- Be sensitive to cultural differences
- Avoid hostile, curt or sarcastic comments
- No objectionable, sexist, racist, or politically intolerant language will be accepted.
- Create a positive online community by offering assistance and support to other participants.
- Use correct grammar and syntax

### ***Instructor's Role***

The instructor's role in this course is that of a discussion facilitator and learning advisor. It is not their responsibility to make sure students log in regularly and submit their assignments. The instructor will read all postings to the general discussion forums on a daily basis but may not choose to respond to each posting. Students will receive individual feedback to assignments through the D2L assessment system.

### ***Office Hours***

As this is an online course there will be no set office hours. Students are encouraged to request a Zoom conference with the instructor to address individualized questions not covered in the assessment responses. Typically, students will receive a response to emailed or posted queries within 48 hours during regular business

days. Responses will be usually by e-mail or telephone if prearranged. If you need to communicate with the instructor by phone, this should pre-arranged through e-mail.

### ***Student's Role***

Online students must take a proactive approach to the learning. As the course instructor's role is that of a learning guide, the role of the student is that of the leader of their own learning. Students will be managing their own time to assure completion of the readings, activities and assignments for the course. In addition, students are expected to take a more active role in peer learning expressed in the discussion forums.

**Assignment Schedule:**

Assignment Count	Graded Item	Discussion (D) Drop Box (DB)	Max. Points	Due Date
	<b>Module Association and Title</b>			
1	0 Introductions	D	0.0	Middle Week 1
2	1.1 Scientific Reasoning	D	10	End of Week 1
3	1.2 Lab Report 1	DB	50	End of Week 2
4	1.3 Fossils and Fossil Preservation	D	10	End of Week 1
5	2.2 Origin of Earth and Earth as a time recorder	D	20	End of Week 2
6	2.3 Age of Earth Exercise	DB	25	End of Week 2
7	3.1 Origin of Life and Mass Extinction	D	20	End of Week 3
8	3.2 Research Paper Description	DB	50	End of Week 3
9	3.3 Video Summary 1	DB	15	End of Week 3
10	4.1 The Tree of Life	D	20	End of Week 4
11	4.2 Lab Report 2	DB	50	End of Week 4
12	4.3 Video Summary 2	DB	15	End of Week 4
13	5.1 Plants: Base of Life on Earth	D	20	End of Week 5
14	6.1 Ancient Environments	D	20	End of Week 6
15	6.2 Lab Report 3	DB	50	End of Week 6
16	7.1 When reptiles ruled the earth	D	20	End of Week 7
17	7.2 Museum Fieldtrip Report	DB	200	End of Week 7
18	7.3 Video Summary 3	DB	15	End of Week 7
19	8.1 Rise of the Mammals	D	20	End of Week 8
20	8.2 Video Summary 4	DB	15	End of Week 8
21	8.3 Lab Report 4	DB	50	End of Week 8
22	9.1 Human Origins	D	20	End of Week 9

23	9.2 Lab Report 5	DB	50	End of Week 9
24	9.3 Video Summary 5	DB	15	End of Week 9
25	10.1 Prehistoric Life: Impact on Human Meaning and Society	D	20	End of Week 10
26	10.2 Research Paper Final Draft	DB	200	End of Week 10
	<b>Final Calculated Points</b>		<b>1000</b>	

### Calendar “Due” Dates and “End” Dates

The course calendar provides the specific due dates for assignments and students should review these regularly. The calendar also lists “end” dates which mark the last date that assignments will be accepted for any credit. Assignments close permanently once an “end” date is crossed.

<b>Readings and Other Learning Resources</b>	
<i>Module</i>	
<b>1</b>	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Tattersall = Chap. 1</i></li> <li>• <i>Prehistoric Life by DK = pp. 34-43</i></li> </ul> <p>Supplemental:</p> <ul style="list-style-type: none"> <li>• <a href="#">Paleontology Defined</a></li> </ul>
	<p><b>Additional Resources</b></p> <ul style="list-style-type: none"> <li>• <i>The first lab utilizes a general 15 specimen fossil kit that students must purchase from <a href="http://geology.com">geology.com</a> (or the bookstore per availability).</i></li> </ul>
<b>2</b>	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Prehistoric Life by DK = pp. 12-21</i></li> </ul> <p>Supplemental Websites:</p> <ul style="list-style-type: none"> <li>• <a href="#">Geologic Time (PBS 12 Minutes)</a></li> </ul>
<b>3</b>	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Tattersall = Chap. 2 &amp; 4</i></li> </ul>

	<ul style="list-style-type: none"> <li>• <i>Prehistoric Life</i> by DK = pp. 26-29, 32-33, 50-63</li> </ul> <p><b>Additional Resources</b></p> <p>Videos:</p> <ul style="list-style-type: none"> <li>• <a href="#">Origin of Life</a></li> <li>• <a href="#">Permian Triassic Extinction Video</a></li> </ul>
4	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Tattersall</i> = Chap. 3 &amp; 5</li> <li>• <i>Prehistoric Life</i> by DK = pp. 30-31, 68-93, 106-107, 128-139</li> </ul> <p><b>Additional Resources</b></p> <p>Videos:</p> <ul style="list-style-type: none"> <li>• <i>BBC Prehistoric Earth Series: Walking with Monsters Episode 1</i></li> </ul>
5	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Prehistoric Life</i> by DK = pp. 96-99, 112-121, 144-153, 174-177, 198-201, 226-233, 284-295, 362-367, 390-395, 418-423</li> </ul> <p>Supplementary Reading:</p> <ul style="list-style-type: none"> <li>• <a href="#">Plant Evolution</a></li> </ul> <p><b>Additional Resources</b></p> <p>Videos:</p> <ul style="list-style-type: none"> <li>• <a href="#">Plants are Cool Too: Clarkia Fossils</a></li> </ul> <p>First Tetrapods</p> <ul style="list-style-type: none"> <li>• <a href="#">Tiktaalik (with interactives)</a></li> <li>• <a href="#">Tiktaalik</a></li> <li>• <a href="#">First land animals</a></li> </ul>
6	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Prehistoric Life</i> by DK = pp. 22-25, 64-67, 82-23, 108-111, 140-143, 170-173, 194-197, 222-225, 280-283, 358-361, 386-389, 414-417</li> </ul> <p>Supplementary Information:</p> <ul style="list-style-type: none"> <li>• <a href="#">Wisconsin Silurian Reefs</a></li> </ul>

	<ul style="list-style-type: none"> <li>• <a href="#">Carboniferous</a></li> </ul>
	<p><b>Additional Resources</b></p> <p>Videos:</p> <ul style="list-style-type: none"> <li>• <a href="#">PETM Paleocene Wyoming</a></li> <li>• <a href="#">Oligocene Oregon</a></li> <li>• <a href="#">Miocene Florida</a></li> </ul>
7	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Tattersall = Chap. 6</i></li> <li>• <i>Prehistoric Life by DK = pp. 162-169, 182-193, 206-221, 244-279, 304-357</i></li> </ul>
7	<p><b>Additional Resources</b></p> <p>Videos:</p> <ul style="list-style-type: none"> <li>• <i>Prehistoric Earth: A Natural History Walking with Dinosaurs</i></li> <li>• <i>Episodes 1 and 2</i></li> <li>• <i>"New Blood"</i></li> <li>• <i>"Time of the Titans"</i></li> </ul>
8	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Tattersall = Chap. 7</i></li> <li>• <i>Prehistoric Life by DK = pp. 374-385, 404-413, 430-439</i></li> </ul>
8	<p><b>Additional Resources</b></p> <p>Videos:</p> <ul style="list-style-type: none"> <li>• <i>Prehistoric Earth: A Natural History Walking with Prehistoric Beasts</i></li> <li>• <i>Episodes 1 and 3</i></li> <li>• <i>"New Dawn" and "Whale Killer"</i></li> </ul>
9	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Tattersall = Chap. 8 &amp; 9</i></li> <li>• <i>Prehistoric Life by DK = pp. 440-479</i></li> </ul>
9	<p><b>Additional Resources</b></p>

	<p>Videos:</p> <ul style="list-style-type: none"> <li>• <b><i>Prehistoric Earth: A Natural History Walking with Cavemen Beasts</i></b></li> </ul> <p><i>Episodes 1 and 2</i></p> <p><i>"First Ancestors" and "Blood Brothers"</i></p> <p><b>Review the Human Origins Interactive</b></p> <p>From <a href="http://humanorigins.si.edu/evidence/human-evolution-timeline-interactive">http://humanorigins.si.edu/evidence/human-evolution-timeline-interactive</a></p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>10</b></p>	<p><b>Readings</b></p> <ul style="list-style-type: none"> <li>• <i>Tattersall = Chap. 10</i></li> </ul>
	<p><b>Additional Resources</b></p> <p>Websites:</p> <ul style="list-style-type: none"> <li>• <i>On pro-Intelligent Design and Scientific Perspectives (see Overview section)</i></li> <li>• <a href="https://intelligentdesign.org/">https://intelligentdesign.org/</a></li> </ul> <p>Video:</p> <p><a href="#">Intelligent design (NOVA)</a></p>

## Course Policies

### Academic Integrity

DePaul University is a learning community that fosters the pursuit of knowledge and the transmission of ideas within a context that emphasizes a sense of responsibility for oneself, for others and for society at large. Violations of academic integrity, in any of their forms, are, therefore, detrimental to the values of DePaul, to the students' own development as responsible members of society, and to the pursuit of knowledge and the transmission of ideas.

Violations include but are not limited to the following categories: cheating; plagiarism; fabrication; falsification or sabotage of research data; destruction or misuse of the university's academic resources; alteration or falsification of academic records; and academic misconduct. Conduct that is punishable under the Academic Integrity Policy could result in additional disciplinary actions by other university officials and possible civil or criminal prosecution.

### Plagiarism

Plagiarism is a major form of academic dishonesty involving the presentation of the work of another as one's own. Plagiarism includes but is not limited to the following:

- The direct copying of any source, such as written and verbal material, computer files, audio disks, video programs or musical scores, whether published or unpublished, in whole or part, without proper acknowledgement that it is someone else's.
- Copying of any source in whole or part with only minor changes in wording or syntax, even with acknowledgement.
- Submitting as one's own work a report, examination paper, computer file, lab report or other assignment that has been prepared by someone else. This includes research papers purchased from any other person or agency.
- The paraphrasing of another's work or ideas without proper acknowledgement.
- Resubmitting one's own previous work from a different course or college, without the permission of the current instructor.

Plagiarism, like other forms of academic dishonesty, is always a serious matter. If an instructor finds that a student has plagiarized, the appropriate penalty is at the instructor's discretion.

### **DePaul University Incomplete Policy**

The intent of the Incomplete grade is to allow students extra time to complete their final assignments. This need arises because, in the closing weeks of the course, they have an event of significant magnitude that adversely affects their ability to complete the course, e.g. serious illness, death in the family, overseas deployment, or natural disaster.

You must request an incomplete grade in writing two weeks before the end of the quarter. Incomplete grades will be considered only after you have satisfactorily completed at least 75 percent of the coursework, and you have such an unexpected, uncontrollable event that prevents you from completing your course. Do not assume that you will qualify for an incomplete. Students who are failing the course at the point where they request an incomplete will not receive one, nor will they be granted after the end of the quarter. Incomplete grades are given at the discretion of the instructor.

If you do receive permission from the instructor to take an incomplete in the course, you will be required to complete a contract with the instructor, specifying how you will finish the missing work within the next two quarters (excluding summer). See the [Incomplete Grade Contract Form](#).

Undergraduate and graduate students will have up to two quarters to complete an incomplete. At the end of the second quarter (excluding summer) following the term in which the incomplete grade was assigned, remaining incompletes will automatically convert to "F" grades. Ordinarily no incomplete grade may be completed after the grace period has expired. Instructors may not change incomplete grades after the end of the grace period without the permission of a college-based Exceptions Committee. This policy applies to undergraduate, graduate and professional programs. NOTE: In the case of a student who has applied for graduation and who has been approved for an Incomplete in his or her final term, the incomplete must be resolved within the four-week grace period before final degree certification.

## College and University Policies

This course includes and adheres to the college and university policies described in the links below:

[Academic Integrity Policy](#) (UGRAD)

[Course Withdrawal Timelines and Grade/Fee Consequences](#)

[Accommodations Based on the Impact of a Disability](#)

[Protection of Human Research Participants](#)

[APA citation format](#)

### **Additional Course Resources**

[University Center for Writing-based Learning](#)

[Dean of Students Office](#)

### **Additional Considerations**

Additional information for the instructor's consideration in planning the syllabus may be provided in this section, especially to address unique programmatic needs.

Recording of Classroom Sessions Conducted via Videoconference tools:

- Synchronous teaching sessions can be recorded by the instructor for educational purposes. These recordings will be made available only to students presently enrolled in the course via password protected links. Links will be posted via the course webpages on D2L and viable for the present term only.
- Students are prohibited from sharing class recordings or disclosing the links to a class session to anyone outside of the course.
- Students have the right to protect their privacy during recordings by appearing in an audio-only mode; pseudonymous usernames can be used by students, if shared offline with the instructor.
- Instructors may retain portions of the recordings that contain their intellectual property consistent with University policy, with students' identifying information removed.

### **Changes to Syllabus**

This syllabus is subject to change as necessary. If a change occurs, it will be clearly communicated to students.

### **Copyright and Student Privacy**

In accordance with [DePaul's Acceptable Use Policy](#), commentary and materials within SCPS Online classes shall not be copied, reproduced or published elsewhere without the express written consent of individuals involved.

## **Credits**

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**Table I**

<b>Competence: S1B</b>	
<b>Competence Statement</b>	<b>S-1-B</b> Can use public or private institutions as resources for learning science.
Student will visit a natural history museum with paleobiological collections and demonstrate that they can learn directly about a fossil group of their choice as well as to investigate a corresponding issue regarding the group’s evolution. In addition, the student will be able to provide an evaluation of the museum’s paleobiology exhibits as they represent the scientific perspective of prehistoric life.	

**Narrative:** Museums and other natural history institutions are the ultimate repositories of fossils unearthed by paleontologists. As such, these institutions can serve as special places to learn about the history of life on earth. To satisfy this competence, students will make a hands-on visit to a museum, make detailed observations of exhibits, and draw conclusions about the subject of their research.

<b>Competence: S2X</b>	
<b>Competence Statement</b>	<b>S-2-X</b> Can describe, differentiate, and explain form, function, and variation within a prehistoric species or fossil group and can explain corresponding evolutionary change as a product of ecological variation through geologic time.
Student will be able to describe and differentiate the character of a fossil group of their choice (e.g., dinosaurs, plants, mammals, invertebrates.). When this has been accomplished, the student will then assess the forms, morphological function, and biological variation within this group. Student will be able to demonstrate an understanding of the basic principles of ecology as they provide a basis for understanding evolution and the patterns of ancient biodiversity.	

**Narrative:** In order to understand the enormous variety and complex interactions of life on earth, paleobiologists collect, describe, and then differentiate fossils into groups. When this has been accomplished, the forms, function, and variation within the ancient biological world can be investigated. Students focusing on this competence will examine how scientists determine the characteristics of past biodiversity and the corresponding evolutionary processes generating and extinguishing biodiversity on earth. Core to understanding how earth’s habitats have evolved their biotas is to discern the interactions and exchanges between organisms and their physical environments. To achieve this competence, students will examine the dynamic character of earth’s ancient ecology (paleoecology) including the paleoecology that promoted the human species.

<b>Competence: S3D</b>	
<b>Competence Statement</b>	<b>S-3-D</b> Can use scientific knowledge to understand varying perspectives on policy issue.

Students undertaking this competence will be able to evaluate two perspectives on a contemporary issue (e.g., evolution, biological extinction trends, impact of global change on biodiversity, or place of humans in the universe) for which paleontology provides essential insights. For example, a student might contrast the scientific and religious views of intelligent design and evolution incorporating insights about species origination and extinction as expressed in the fossil record.

**Narrative:** The scientific field of paleontology provides society with a great amount of data and conclusions that contribute to a broader understanding of contemporary issues and humanity. In satisfying this competence students will evaluate a contemporary issue through the perspective of paleontology and another perspective. The alternative perspective may be at great odds with paleontological view (e.g., religion) or the alternative perspective may be a complimentary but challenging one within the sciences itself (another field of science with a varying conclusion).

Competence: S4	
<b>Competence Statement</b>	<b>S-4</b> Can describe and explain connections among diverse aspects of nature.
Student will be able to describe and explain the interconnections of earth's past biodiversity to climate, extinction, evolution, ancient environments and/or natural resources. Student will be able to compare and contrast the interconnections observed for prehistoric life to those discerned within the modern biosphere.	

**Narrative:** The stability of life on planet earth depends on a great variety of interrelated factors such as the interplay between biological, atmospheric, terrestrial and hydrospheric conditions. Students pursuing this competence will examine the important interconnections of nature that have acted to promote diverse life forms and generally stable habitats for hundreds of millions of years on earth. For example, a student could research questions concerning the fossil record's support of the GAIA hypothesis, how predator-prey relationships have been ongoing for hundreds of millions of years, how life recovers after mass extinction events, or how varying climate impacts evolution and so on.

Competence: S5	
<b>Competence Statement</b>	<b>S-5:</b> Can explain and evaluate the nature and process of science.
Students pursuing the S5 will demonstrate this competence by employing scientific reasoning during lab and self-directed fieldtrip activities which require testing hypotheses.	

**Narrative:** Scientific reasoning is the basis of inquiry in the natural sciences including paleontology. Our knowledge of the history of earth and its lifeforms has been developed through a steady process of discovering and interpreting fossils including their ages and

evolutionary relationships. To fulfill this competence a student must demonstrate they can regularly apply the hypothetico-deductive approach to address question proposed in course learning activities.