Prehistoric Life

SNC210/SW259 (Online Course)

COURSE SYLLABUS

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Course Description:

Course 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, a short exam, 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 (Fossilworks), as well as online simulations of natural selection and the history of life (Bio-alive). 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, Milwaukee Public 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 and complete a short answer essay exam.

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 - Course Learning Outcomes for 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.

Category	***Learning Outcome***
Scientific Inquiry-Elective (SI-Elective 1)	Students will be able to apply appropriate concepts, tools, and techniques of scientific inquiry.
Scientific Inquiry-Elective (SI-Elective 2)	Students will be able to explain the interaction between the content of their SI-Elective course and other scientific disciplines or the broader society.
Scientific Inquiry-Elective (SI-Elective 3)	Students will be able to describe how natural scientific, mathematical, and/or computational methodologies function as mechanisms for inquiry.
Scientific Inquiry-Laboratory (SI-Lab) courses **Students will understand how science serves as a mechanism for inquiry into the natural world through hands-on, experience-based investigation.**	a. Students will be able to pose meaningful scientific questions and generate testable scientific hypotheses.
	b. Students will be able to plan, design and conduct scientific investigations in a collaborative environment using appropriate tools and techniques to gather relevant data in order to test and revise scientific hypotheses.
	c. Students will be able to develop and use scientific models (conceptual, physical, and mathematical) to make predictions and develop explanations of natural phenomena.

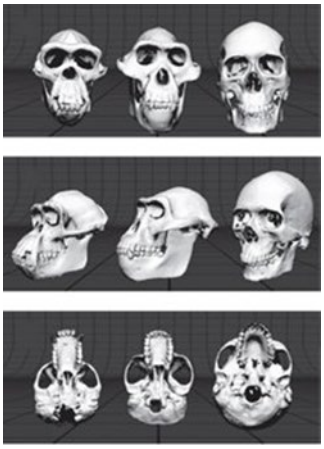
	d. Students will be able to address variability in the data and recognize and analyze alternative explanations and predictions.
	e. Students will be able to communicate scientific procedures, results, and explanations and engage in arguments based on scientific evidence.

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

Learning Outcome	***Demonstration***
Scientific Inquiry-Elective (SI-Elective 1)	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 *Prehistoric Life* 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. Students in *Prehistoric Life* 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.
Scientific Inquiry-Elective (SI-Elective 2)	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. 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.
Scientific Inquiry-Elective (SI-Elective 3)	As a result of course learning activities, 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.
Scientific Inquiry-Laboratory (SI-Lab) courses **Students will understand how science serves as a mechanism for inquiry into the natural world through hands-on, experience-based investigation.**	a. The *Prehistoric Life* self-directed fieldtrip requires students to identify a plausible research question/hypothesis through examination of current scholarly literature. The research paper assignment parallels this strategy but students are required to obtain their data via the literature (i.e., versus field data). Finally, there are four laboratory exercises in the courses that provide hands-on, virtual and/or simulation environments for students to investigate the prehistoric world and its components.
	b. For the course's labs, self-directed museum fieldtrip, and research paper, students determine and apply an appropriate methodology to address questions, collect data, analyze results with regard to falsification or support of a hypothesis and indicate their study's caveats and conclusions.
	c. In the course's 5 labs students apply conceptual models for fossil preservation, evolution, ecology, and dental adaptation to make predictions and develop explanations of natural phenomena. In lab 5 they employ mathematical analysis of hominid features to make predictions and develop explanations of natural phenomena.
	d. The fossil record and its interpretation constantly evolve as paleontologists discover new remains and emerging technologies are applied to gather and analyze information. Students in *Prehistoric Life* will regularly observe certainties in paleontology that involve discrete observations such as the oldest fossils (lowest stratigraphic position), organisms change shape/features in rock sequences, organisms in the fossil record often have no living relatives (i.e., extinction), geographic locations on earth change in ecology over time (e.g., former oceans now underlie farmland). Likewise, quantitative aspects of paleontology that involve measurements will demonstrate to students the ideas of uncertainty (i.e., error and probability). Examples of principal measurement areas in paleontology are radiometric dating of fossils, first appearance of fossil taxa in the stratigraphic record, measuring phylogenetic relationships between species, morphometric analysis of fossil anatomy, and taxonomic diversity analysis.
	e. Students communicate their research and experimentation following a science journal format that includes the sections: abstract, introduction, literature review/statement of problem, methods, results, discussion, conclusion and references. The format of these learning activities necessitates that students make the crucial distinction between their results and their subsequent interpretation and conclusions drawn from results. The conveyance of paleontological theories and content in labs also centers on testing hypotheses, data collection and analysis.

Liberal Studies Program Outcomes	
Reflectiveness:	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 *Prehistoric Life* 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.
Critical and creative thinking:	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.



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 COMPETENCE-BASED DEGREE PROGRAMS

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

S1B	S2X	S3D	S4	S5

The above competencies will be developed as outlined in the following tables:

Competence: S1B	
Competence Statement	**S-1-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.

Competence: S2X	
Competence Statement	**S-2-X** 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.

Competence: S3D	
Competence Statement	**S-3-D** 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	
Competence Statement	**S-4** 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	
Competence Statement	**S-5:** 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.

Learning Resources:

Course Resources

Required Text and Readings:

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.)

A**dditional scholarly articles may be made available as e-reserves at:**
https://library.depaul.edu/services/Pages/Course-Reserves-Services.aspx

Recommended reading (not required):
Cowen, R. (2013). History of life. Chichester: Wiley-Blackwell.

Required Lab Resource:

Fossil Kit:
"What are Fossils? How do Fossils Form?" from the General Fossil Collection, available for purchase through geology.com. (approx. $16.95).

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.

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, an exam, 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.

Exam. (100 points). Students will undertake a short answer essay exam towards the conclusion of the course that will address key topics of the class. The instructor may substitute this with an alternative learning activity for equivalent points or make the test optional with class points prorated.

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. (100 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%
Exam	1	100	100	10%
Video Summaries	5	15	75	7.5%
Geologic Time Exercise	1	25	25	2.5%
Museum or Fossil Site Field Trip Report	1	100	100	10%
Total			**1000 Points**	100%

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. Students take a short answer essay style exam covering key course topics. 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:

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.
Please place the following statement in your syllabus regarding Incomplete grades:

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 Contract for Issuance of Incomplete Grade 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.

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 *Prehistoric Life*, 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
The instructor will designate times where students will receive timely response to questions and input regarding ongoing learning activities such as research papers, labs, and self-directed fieldtrips. This response may be by e-mail, telephone or prearranged online meetings. Generally, students will receive a response to emailed or posted queries within 48 hours. The instructor may choose to employ synchronous communications tools such as Zoom and set specific office hours.

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.

Course Schedule:

Assignment Count	Graded Item	Discussion (D) Drop Box (DB)	Max. Points	Due Date
	Module Association and Title			
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	100	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
27	10.3 Exam	DB	100	Middle of Week 11
	Final Calculated Points		**1000**	

Course Policies:

This course includes and adheres to the college and university policies described in the links below:
APA citation format
Academic Integrity Policy
Incomplete (IN) and Research (R) Grades Expiration Policy
Course Withdrawal Timelines and Grade/Fee Consequences
Accommodations Based on the Impact of a Disability
Protection of Human Research Participants

About the Course Author:

Kevin F. Downing, Professor – DePaul University

Dr. Downing is a Professor and Associate Dean 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).

Credits
This course was authored and designed by Dr. Kevin F. Downing and embedded for online use at DePaul University by the staff at DePaul's Center for Teaching and Learning.