

 <b>FLORIDA ATLANTIC UNIVERSITY</b>	<b>NEW COURSE PROPOSAL</b> <b>Undergraduate Programs</b>		UUPC Approval <u>12-7-20</u> UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	<b>Department</b> <u>Biology</u> <b>College</b> <u>Wilkes Honors College</u> <i>(To obtain a course number, contact <a href="mailto:erudolph@fau.edu">erudolph@fau.edu</a>)</i>		
<b>Prefix</b> <u>GLY</u> <b>Number</b> <u>4054</u>	<i>(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)</i>  <b>Lab Code</b> _____	<b>Type of Course</b> <input type="text" value="Lecture"/>	<b>Course Title</b> <u>Honors Evolution of Life on Earth</u>
<b>Credits</b> <i>(Review Provost Memorandum)</i> <u>3</u>	<b>Grading</b> <i>(Select One Option)</i> <b>Regular</b> <input checked="" type="radio"/> <b>Pass/Fail</b> <input type="radio"/> <b>Sat/UnSat</b> <input type="radio"/>	<b>Course Description</b> <i>(Syllabus must be attached; Syllabus Checklist recommended; see Guidelines)</i> This is an interdisciplinary course combining topics from geology and biology. As such, it applies basic biological and geological principles such as evolution, ecology, plate tectonics, and stratigraphy to understanding the complexity of life through time, and the evolutionary and ecological processes that brought about those changes. It reviews the evolutionary history of major groups of organisms as seen in the fossil record and major events such as the origins of life, the invasion of land, mass extinctions, and climate change	
<b>Effective Date</b> <i>(TERM &amp; YEAR)</i> <u>Summer 2021</u>	<b>Prerequisites, with minimum grade*</b> <u>BSC 1011, C-</u>		<b>Corequisites</b> <u>none</u>
		<b>Registration Controls</b> <i>(Major, College, Level)</i> <u>elective in both Biology and Marine Biology concentrations</u>	
<b>*Default minimum passing grade is D-. Prereqs., Coreqs. &amp; Reg. Controls are enforced for all sections of course</b>			
<b>WAC/Gordon Rule Course</b> <input type="radio"/> Yes <input checked="" type="radio"/> No  <small>WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to proposal. See <a href="#">WAC Guidelines</a>.</small>		<b>Intellectual Foundations Program (General Education) Requirement</b> <i>(Select One Option)</i>  <u>None</u>  <small>General Education criteria must be indicated in the syllabus and approval attached to the proposal. See <a href="#">GE Guidelines</a>.</small>	
<b>Minimum qualifications to teach course</b> <u>Ph.D. in evolutionary biology or paleontology, or other appropriate field</u>			
<b>Faculty Contact/Email/Phone</b> <u>Jon Moore, jmoore@fau.edu, 561-799-8025</u>		<b>List/Attach comments from departments affected by new course</b> <u>See correspondence attached from Geoscience.</u>	
<b>Approved by</b> Department Chair <u>William O'Brien</u> College Curriculum Chair <u>Carmen Canete Quesada</u> College Dean <u>Terje Hill</u> UUPC Chair <u>Jerry Haky</u> Undergraduate Studies Dean <u>Edward Pratt</u> UFS President _____ Provost _____			<b>Date</b> <u>12/4/20</u> <u>12/4/2020</u> <u>12/4/2020</u> <u>12-8-20</u> <u>12-8-20</u> _____ _____

Email this form and syllabus to [mianning@fau.edu](mailto:mianning@fau.edu) seven business days before the UUPC meeting.

**GLY 4054 Honors Evolution of Life on Earth (3 credits)  
Summer 2021 (First half)**



**Room and Time:** XXX, XXX

**Instructor:** Prof. Jon A. Moore

**Office:** HC 175

**Phone:** 561-799-8025

**Email:** [jmoore@fau.edu](mailto:jmoore@fau.edu)

**Office Hours:** XXX

**Course Description**

This is an interdisciplinary course combining topics from geology and biology. As such, it applies basic biological and geological principles such as evolution, ecology, plate tectonics, and stratigraphy to understanding the complexity of life through time, and the evolutionary and ecological processes that brought about those changes. It reviews the evolutionary history of major groups of organisms as seen in the fossil record and major events such as the origin of life, the invasion of land, mass extinctions, and climate changes.

In the first portion, you will learn the general principles that are a prerequisite for understanding the remainder of the course. These fundamentals include geologic time, processes of fossilization, principles of evolution and plate tectonics. In the second portion, we will focus on the record of life, from the earliest forms of life to the end of the Pleistocene (10,000 years ago), the world's largest extinctions, changes in fauna and flora associated with those extinctions, the history of life on land, and how it originated from life in the sea.

**Instructional Method:** Normally, this course would involve in-person lectures and field trips. Depending on circumstances, this course might be fully online in summer 2021. If it is online, those lectures will be "chunked" into narrated video presentations (15-30 min long), available for asynchronous viewing online by links via Canvas. Class participation in this case will involve several discussion boards via Canvas covering the outside readings. The virtual field trip will likely include an edited movie of the various local outcrops of the Pleistocene-aged Anastasia Formation.

**Note On Honors Distinction:** This Honors course differs from a non-Honors course in the work and intellectual demands it places on students, emphasizing critical thinking and writing, and in contributing to an interdisciplinary approach to learning. In addition to the textbook readings, students will read articles published by professional scholars in peer-reviewed journals, and are expected to think critically about the debates within the field. This course contributes to the Honors College curriculum by serving as an elective in the Biology and Marine Biology concentrations.

**Prerequisites:** BSC 1011 (C-)

## **Course Objectives**

Life was not always as we see it today with flowered, green landscapes replete with mammals and birds, and warm seas full of coral reefs, sea grasses and bony fishes. The objective of this course is to provide an understanding of the interacting biological, geological, and environmental principles and processes that shaped life on Earth over the past 4.6 billion years.

## **Textbook**

Ward, P. & J. Kirschvink. 2015. *A New History of Life*. Bloomsbury Press, New York.

## **Course Evaluation Method**

Class attendance & participation	10% = 35 pts
Online quizzes	20% = 70 pts
Student presentation	14% = 50 pts
Midterm exam	28% = 100 pts
Final exam	28% = 100 pts

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	0 – 59

Class attendance and participation is crucial in this course. The lectures will cover topics beyond the material covered in the readings. Outside readings and the textbook will help provide background information for the lectures, so lectures are not a replacement for them. There may be additional outside readings as new papers in the field are published. If you rely on the readings without attending lectures, or on the lectures without doing the readings, you will not receive all of the information that is covered in the course.

The presentation will be a roughly 15-20 slide powerpoint on a paleontological topic approved by the instructor. Do not plagiarize material from websites for this presentation and remember to cite all your sources of information.

You are expected to maintain high standards of academic honesty. Any student found in violation of these standards will earn an automatic F and be reported to the Deans Office, no exceptions made.

## **Field Trips**

A virtual field trip will be conducted during one class period to outcrops of the Anastasia rock formation along the east coast of Florida. If circumstances allow, an actual optional field trip will be planned for one Saturday (probably in June) to go canoeing/kayaking down the Peace River with stops along the way to collect fossils in the river itself.

### **COVID-19 Statement**

All students in face-to-face classes are required to wear masks during class, and students must sanitize their own workstations upon entering the classroom. Taking these measures supports the safety and protection of the FAU community. Students who do not adhere to these rules will be asked to leave the classroom and/or be removed from the course. Students experiencing flu-like symptoms (fever, cough, shortness of breath), or students who have come in contact with an infected person should immediately contact FAU Student Health Services (561-297-3512).

### **Attendance Policy**

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations, or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances, and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

### **Policy on Late Work and Incompletes**

Assignments must be turned in on time. Extensions may only be given at the instructor's discretion depending on the student's circumstances. If all work is not completed by the end of the semester, an incomplete may be awarded, but if that is not made up within a year of the end of the course, your grade will be based on the material handed in up to that point.

### **Classroom Etiquette Policy**

In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions.

### **Disability Policy**

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses -- Boca Raton, SU 131 (561-297-3880); in Davie, LA 131 (954-236-

1222); in Jupiter and all Northern Campuses, SR 111F (561-799-8585). Disability services are available for students on all campuses. For more information, please visit SAS website at [www.fau.edu/sas/](http://www.fau.edu/sas/).

### **Counseling and Psychological Services (CAPS) Center**

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>

### **Code of Academic Integrity**

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high-quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see [University Regulation 4.001](#). All students agree to adhere to the honor code, available online at: <https://www.fau.edu/honors/academics/honor-code/>

### **Basic Needs Policy**

Your safety and wellbeing are more important than anything going on in this class. Please feel free to reach out to me if you need to talk. Any students who face challenges securing their food or housing or personal safety are urged to contact the FAU Dean of Students (<http://www.fau.edu/dean/>) for support. FAU has a food assistance program on the Boca campus (<http://www.fau.edu/dean/beyondfood/index.php>) that can be accessed via the FAU shuttle.

**Class schedule:**

<b>Date</b>	<b>Lecture Topic</b>	<b>Reading for next class</b>
Class 1	01 Basic Geology 02 How to Tell Time	Ch. 1 Judson 1 & 2
Class 2	03 Sedimentation 04 Fossilization	Ch. 2 Babcock, Cooper
Class 3	05 Plate Tectonics 06 Sea Level Changes	
Class 4	07 Evolution & Phylogeny Reconstruction	Ch. 3 Omland
Class 5	Virtual Field Trip: Anastasia Formation	Ch. 4-7
Class 6	<b>Midterm Exam</b> 08 Origin of Life/Precambrian	Portell  Ch. 8-10
Class 7	09 Early Paleozoic Record 10 Leaving the Water: Adaptations to Living on Land	Ch. 11-13 Butterfield
Class 8	11 Coal swamps 12 Mesozoic Ocean Life	Ch. 14-16 Cleal
Class 9	13 Dinosaurs and the Origin of Birds 14 Cenozoic Environments	Ch. 17 & 18
Class 10	15 Florida's Fossil Record 16 Mass Extinctions & Patterns in Fossil Record	Benton
Class 11	17 Paleontology in Pop Culture <b>Final Exam</b> (powerpoint presentations also due)	Bradbury

## **References**

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- Gee, H., 1999. *In search of deep time: beyond the fossil record to a new history of life*. Cornell University Press.
- Gould, S.J., 1990. *Wonderful life: The Burgess Shale and the nature of history*. WW Norton & Company.
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Schopf, J.W., 1992. *Major events in the history of life*. Jones & Bartlett Learning.

Vermeij, G.J., 1987. *Evolution and escalation: an ecological history of life*. Princeton University Press.