

## PALEOBOTANY Fall 2021

**3 Credits**, BOT4935, BOT5305, GLY4930, GLY6932

This course deals with the evolution of plants through geologic time, based upon the fossil record. We begin with the earliest known life on earth and consider the history of major phylogenetic groups of plants through time with attention to changes in morphology and community structure. Topics include the earliest land plants, the first leaves, the first trees, and changes in reproductive biology leading from spores to seeds and pollen and the evolution of flowering plants. We will also emphasize the response of plants to continental rearrangements, extraterrestrial impact, and consider the contributions and response of plants to changes in climate.

**Professor:** Steven Manchester, Florida Museum of Natural History: [steven@flmnh.ufl.edu](mailto:steven@flmnh.ufl.edu)

**Meeting times:** Monday 1:55–4:55, Wed 3:00–3:50 pm

**Lectures:** Mon, per.7, Wed per. 8, Rolfs Hall 105.

**Laboratory:** Mon per. 8, 9 Rolfs Hall 105. Become familiar with fossil specimens.

**Textbook: Available online through Marston Science Library:** Paleobotany--the biology and evolution of fossil plants Taylor, Taylor & Krings 2009

**Grading Basis:** 3 exams covering lecture and laboratory; Graduate students are required to give a class presentation on a paleobotanical project of their choice.

**Prereq:** Upper-level course in botany or geology or permission of instructor.

**Health Advisory—Covid 19.** For the health and well-being of all participants, please read the notice at conclusion of this syllabus, below.\*

### Schedule of Lecture & Laboratory Topics 2021

Mon. Aug. 23: Introduction to Paleobotany. {*reading*: textbook Ch. 1} [**Lab A**: Modes of fossil preservation; Precambrian fossils]

Wed. Aug. 25: Origin of life, Precambrian diversification. {*reading* Ch. 2}

Mon. Aug. 6: Holiday; Labor day

Wed Sep. 8: Origin of land plants, Tracheophytes {*reading*: textbook Ch. 6}

Mon. Sep. 13: Devonian happenings. [**Lab B:** Early Land Plants] {*reading:* textbook Ch. 8}

Wed. Sep. 15: Early Lycophytes {*reading:* textbook Ch. 9}

Mon. Sep. 20: Lycopods into the Carboniferous [**Lab C:** Lycopods] {*reading:* textbook Ch. 9 continued}

Wed. Sep. 22: Paleozoic Sphenophytes. {*reading:* textbook Ch. 10}

Mon. Sep. 27: Mesozoic to Recent Sphenophytes [**Lab D:** Sphenophytes];

**Wed. Sep. 29: Examination I**

Mon. Oct. 4: Ferns [**Lab E:** Ferns]; {*reading:* textbook Ch. 11}

Wed. Oct. 6: [Origin of Lignophytes, Progymnosperms {*reading:* textbook Ch. 12}

Mon. Oct. 11: Origin of Seed plants [**Lab F:** Progymnosperms]

Wed. Oct. 13: Paleozoic seed ferns {*reading:* textbook Ch. 14}

Mon. Oct. 18: Paleozoic environments and biogeography [**Lab G:** Paleozoic seed ferns]

Wed. Oct. 20: Conifer diversification and evolution {*reading:* textbook Ch. 21}

Mon. Oct. 25: Early coniferophytes [**Lab H:** Cordaites, Conifers] {*reading:* textbook Ch. 20}

Wed. Oct. 27: Mesozoic gymnosperms Gnetales and other gymnosperms continued.

Mon. Nov. 1: Mesozoic gymnosperms Cycads, Bennettiales. [**Lab I:** Cycads, Bennettiales] {*reading:* textbook Ch. 17}

**Wed. Nov. 3. Examination II**

Mon. Nov. 8: Angiosperm origins, relationships to other seed plants [**Lab. J:** Cretaceous angiosperms]

Wed. Nov. 10: Diversification of extant angiosperm families; biogeographic patterns

Mon. Nov. 15: Angiosperms continued. [**Lab K:** Angiosperm case histories] {*reading:* textbook Ch. 22}

Wed Nov. 17: Cretaceous-Cenozoic boundary

Mon. Nov. 22: Paleocene-Eocene boundary [**Lab L:** Tertiary angiosperms]

Wed. Nov. 24: Holiday

Mon Nov. 29. Angiosperm case histories [**Lab M:** Applied Techniques]

Wed Dec. 1. Cretaceous/Tertiary boundary, paleoclimate. Patterns in the evolution of flowers and fruits.

Mon. Dec. 6: Student presentations and discussion.

Wed Dec. 8: Overview [Last day of class]

Mon Dec 13 **Examination III - Final Exam**

\* In response to COVID-19, the following practices are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our

neighbors, and our loved ones.

● If you are not vaccinated, get vaccinated. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment: <https://coronavirus.ufhealth.org/vaccinations/vaccine-availability/>. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.

● You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated. Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.

○ Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.

○ Hand sanitizing stations will be located in every classroom.

● If you sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email [covid@shcc.ufl.edu](mailto:covid@shcc.ufl.edu)) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the [UF Health Screen, Test & Protect website](#) for more information.

○ Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.

○ If you are withheld from campus by the Department of Health through Screen, Test & Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.

● Continue to regularly visit [coronavirus.UFHealth.org](https://coronavirus.UFHealth.org) and [coronavirus.ufl.edu](https://coronavirus.ufl.edu) for up-to-date information about COVID-19 and vaccination.