

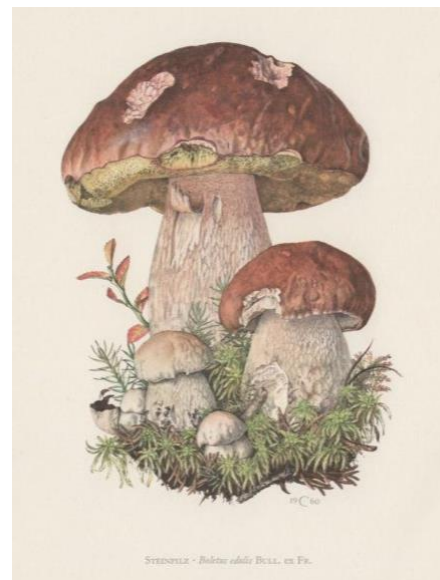
The Fungal Kingdom (Fall-Winter 2024-2025)

CRN: Jr-Sr (16): 10031

Faculty: Dr. Paul Przybylowicz and Dr. Lalita Calabria

Prerequisites: 8 credits general biology and 4 credits of ecology/natural history.

Program Description: Fungi play fundamental roles in terrestrial ecosystems as pathogens, recyclers of organic matter, and as partners with plants and algae to form mycorrhizae and lichens. From mushrooms, antibiotics, and high-fructose corn syrup to yeasts, “acid-washed” jeans, and bioremediation, the importance of fungi for humans and the ecosystems they inhabit is indisputable. This two-quarter, upper-level program will focus on understanding these unique and pivotal organisms.



During fall quarter, our program time will consist primarily of fieldwork and labs where students will learn to collect, describe and identify fruiting mushrooms and lichens using dichotomous keys, chemical and microscopic techniques. We will learn about the natural history and ecology, as well as field-based methods for assessing biodiversity of lichens and fruiting mushrooms. Fall quarter lectures and workshops will cover biology, evolution, systematics and physiology of fungi and lichens. Seminar will focus on exploring the scientific literature and developing technical writing skills. We will expect students to research topics in the primary scientific literature and to summarize and share their findings with the entire class. Students will have opportunities for independent directed work, both individually and in small groups. There will be multiple one-day field trips and two multi-day field trips.

In winter quarter, our focus will shift more indoors to laboratory work with micro-fungi and genetic taxonomy techniques. Lectures and workshops in winter quarter will explore application of mycology to environmental problem-solving as well as the many ecological roles that fungi play: mutualists to plants and animals, nutrient cyclers, disease-causing agents, and indicators of environmental quality. Students will also further their skills in technical writing, library research, critical thinking, and public presentation by creating and presenting a research proposal. Credit equivalencies for the program will include mycology, lichenology, lichen taxonomy, fungal taxonomy, and scientific writing.

If you are a student with a disability and would like to request accommodations, please contact the faculty or the office of Access Services (Library Bldg. Rm. 2153, PH: (360) 867-6348; TTY (360) 867-6834) prior to the start of the quarter. If you require accessible transportation for field trips, please contact the faculty well in advance of the field trip dates to allow time to arrange this.

This offering will prepare you for careers and advanced study in: ecology, biology, natural history, education, and environmental studies.

Upper Division Science Credit: All credit will be designated upper-division science for students who demonstrate a solid working understanding of the prerequisites and successfully complete all of the program work.

Weekly Schedule:

Program activities will occur on Tue, Thu, and Friday. A more detailed schedule will be emailed to registered students.

Program Fees and Field Trips: \$550 in fall for overnight field trips & required lab fee, \$50 in winter for required lab fee

Books (available at Evergreen Bookstore):

21st Century Guidebook to the Fungi, 2nd Edition by David Moore, Geoffrey Robson and Anthony Trinci. Cambridge University Press. 9781108745680

Mushrooms of Cascadia: An Illustrated Key (2021) Michael Beug. The Fungi Press, ISBN 978-0-578-90476-4

Macrolichens of the Pacific Northwest, Second Ed. Bruce McCune and Linda Geiser (2009). Oregon State University Press. ISBN 9780870715655

Computer software

MycoMatch: Mushrooms of the Pacific Northwest. Version 2.4 Mushroom identification software. Available for free at <https://mycomatch.com>

Optional Identification Books

Mushrooms of British Columbia (2021) MacKinnon and Luther. The Royal BC Museum, ISBN: 077267955X

Mushrooms of the Redwood Coast (2015) Noah Siegel and Christian Schwarz Ten Speed Press ISBN 9781607748175

Mushrooms of the Pacific Northwest. (2009) Steve Trudell and Joe Ammirati. Timber Press. ISBN 9780881929355

Lichens of North America, (2001) Irwin M. Brodo, Sylvia Duran Sharnoff, and Stephen Sharnoff Yale University Press. ISBN 9780300082494

Ascomycete Fungi of North America (2014) Michael Beug, Alan Bessette and Arleen Bessette ISBN: 978-029275452-2

Plants of the Pacific Northwest Coast (1994) Pojar, J. and A. MacKinnon. Lone Pine Publishing.

Mushrooms Demystified (1986) 2nd edition. David Arora. Ten Speed Press; ISBN: 0898151694

Dictionary of Word Roots and Combining Forms. 1960. Borrer, D.J. Mayfield Publ. Co.

Questions?

Contact faculty: przybylo@evergreen.edu office: Lab II 3269 and calabril@evergreen.edu; office: Lab 1 3013