

Ecological Forecasting (NRES 776)

Spring, 2024

Course Information

Instructor Information

Instructor: Dr. Bob Shriver

Office: 218B

Email: rshriver@unr.edu

Office Hours: By request (email me to schedule)

Course Website: <https://bobshriver.github.io/UNR-EcoForecast/>

Course Description

Environmental scientist and ecologists are increasingly asked to predict ecological processes to improve the sustainable management of natural resources and further basic understanding. This course will cover the fundamental concepts of the emerging field of ecological forecasting including: modeling approaches, representing and propagating uncertainty, model validation and updating, and adaptive management.

Course Pre-requisites

None, however prior programming experience with R is highly suggested.

Also suggested: NRES 746 or NRES 779

Required Texts/Course Materials

Required text: *Ecological Forecasting*, Michael Dietze, Princeton University Press (*Available online for free through UNR Library*)

Suggested but not required: *Forecasting: Principals and Practice*, Robert Hyndman & George Athanasopoulos

Available for free at: <https://otexts.com/fpp3>

A laptop will be required for some in class activities,

Class Procedures/Structures

The class will be a mixture of lecture, lab, and discussion see schedule at:
<https://bobshriver.github.io/UNR-EcoForecast/>

Student Learning Outcomes

- Describe motivations for environmental scientists and ecologist to develop forecasts.
- Develop ecological forecasts and validate models with observed data.
- Identify how different sources of uncertainty impacts forecast and ways in which uncertainty can be communicated.

- Identify the similarities and differences between ecological forecasting and other branches of forecasting
- Describe the relationship between ecological forecasting and the adaptive management cycle.

Course Requirements

Grade Breakdown

Attendance and Participation: 30%

Lab assignment: 30%

Leading discussion: 10%

Final Project: 30%

Grading Criteria, Scale, and Standards

Sample letter grade assignment:

A: 93% - 100%

A-: 90% - 92.9%

B+: 87% - 89.9%

B: 84% - 86.9%

B-: 80% - 83.9%

C+: 77% - 79.9%

C: 74% - 76.9%

C-: 70% - 73.9%

F: <70%

Late Work or Make-up Exams Policies

Students are expected to lead discussion on their assigned day. Students should consult with the instructor about any late lab assignments.

Course Calendar or Topics Outline

See course website

University Policies

Statement on Academic Dishonesty

The University Academic Standards Policy defines academic dishonesty, and mandates specific sanctions for violations. See the University Academic Standards policy: [UAM 6,502](#).

Statement on Student Compliance with University Policies

In accordance with section 6,502 of the University Administrative Manual, a student may receive academic and disciplinary sanctions for failure to comply with policy, including this syllabus, for failure to comply with the directions of a University Official, for disruptive behavior in the classroom, or any other prohibited action. "Disruptive behavior" is defined in part as behavior, including but not limited to failure to follow course, laboratory or safety rules, or endangering the health of others. A student may be dropped from class at any time for misconduct or disruptive behavior in the classroom upon recommendation of the instructor and with approval of the college dean. A student

may also receive disciplinary sanctions through the Office of Student Conduct for misconduct or disruptive behavior, including endangering the health of others, in the classroom. The student shall not receive a refund for course fees or tuition.

Statement of Disability Services

Use either the traditional or online statement, in addition to the last sentence regarding third party materials.

For Traditional and Seated Classrooms:

Any student with a disability needing academic adjustments or accommodations is requested to speak with me or the [Disability Resource Center](#) (Pennington Achievement Center Suite 230) as soon as possible to arrange for appropriate accommodations.

For Online Courses:

If you are a student who would normally seek accommodations in a traditional classroom, please contact me as soon as possible. You may also contact the Disability Resource Center for services for online courses by emailing drc@unr.edu or calling 775-784-6000. Academic accommodations for online courses may be different than those for seated classrooms; it is important that you contact us as soon as possible to discuss services. The University of Nevada, Reno supports equal access for students with disabilities. For more information, visit the [Disability Resource Center](#).

This course may leverage 3rd party web/multimedia content, if you experience any issues accessing this content, please notify your instructor.

Statement on Audio and Video Recording

Student-created Recordings

Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped, or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may have been given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.

Instructor-created Recordings

Class sessions may be audio-visually recorded for students in the class to review and for enrolled students who are unable to attend live to view. Students who participate with their camera on or who use a profile image are consenting to have their video or image recorded. If you do not consent to have your profile or video image recorded, keep your camera off and do not use a profile image. Students who un-mute during class and participate orally are consenting to have their voices recorded. If you do not consent to have your voice recorded during class, keep your mute button activated and only communicate by using the "chat" feature, which allows you to type questions and comments live.

Statement on Maintaining a Safe Learning and Work Environment

The University of Nevada, Reno is committed to providing a safe learning and work environment for all. If you believe you have experienced discrimination, sexual harassment, sexual assault, domestic/dating violence, or stalking, whether on or off campus, or need information related to

immigration concerns, please contact the University's Equal Opportunity & Title IX office at 775-784-1547. Resources and interim measures are available to assist you. For more information, please visit the [Equal Opportunity and Title IX](#) page.

Statement on Campus Closures or Delays

In the event of class cancellations or delays caused by inclement weather conditions, fire/smoke conditions, or other unforeseen emergencies, the safety and well-being of students are the University's top priority. Official notifications will be disseminated through the University website and other official channels with details related to any campus delays or closures.

In the event of a campus closure, you will be informed as to whether the class will be offered remotely or if it will be canceled. If the class is cancelled, you will receive information on how to address any missed course content.

Students facing significant impacts due to these events are encouraged to communicate with their instructor for potential accommodations.

Optional Additional Information

In addition to the required information listed above, it is strongly recommended that the syllabus include:

- Information for students who must miss classes due to illness or other excused reasons. A sample statement is "If you are sick, please do not come to class. If you must miss class due to illness, please contact your instructor immediately to make arrangements for any missed work or lecture materials."
- Methods for communicating with students outside the classroom regarding matters such as class cancellations, meeting times, or room changes
- More detail about what constitutes academic dishonesty, with a concrete list or examples of "dos and don'ts" in the context of the class
- Statement for Academic Success Services: Your student fees cover usage of the [University Math Center](https://www.unr.edu/university-math-center) (<https://www.unr.edu/university-math-center>), (775) 784-4433; [University Tutoring Center](https://www.unr.edu/tutoring-center) (<https://www.unr.edu/tutoring-center>), (775) 784-6801; and [University Writing & Speaking Center](https://www.unr.edu/writing-speaking-center) (<https://www.unr.edu/writing-speaking-center>), (775) 784-6030. These centers support your classroom learning; it is your responsibility to take advantage of their services. Keep in mind that seeking help outside of class is the sign of a responsible and successful student.

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