

Course Title: Global Amphibian Diversity

Course Number: BIOL 467

Course Prerequisites: BIOL 2101, BIOL 2102, and BIOL 2103L

Course Credits: 3

Term: Spring 2026

Lecture Meeting Times: TR 8:00 AM – 9:15 PM

Laboratory Meeting Times: T 9:15 AM – 11:45 PM

Lecture Location: NHSC 101

Laboratory Location: NHSC 101

Instructor: Moses J. Michelsohn (he/him)

Instructor Email: mmichelsohn@unm.edu

Instructor Office: CAST 66

Instructor Student Drop-In Hours: By appointment using link on UNM Canvas.

Course Description: The Living Amphibians include three major lineages (Frogs, Salamanders, and Caecilians) which exhibit a broad diversity of forms, behaviors, phylogeographic histories, ecologies, and conservation challenges. This course will familiarize students with the nearly 9,000 (and rapidly growing) described species of amphibian. Students will explore this diversity through lectures, laboratory exercises involving hands-on study of museum specimens, and discussion of natural history and conservation efforts with amphibian biologists. Students interested in careers working with amphibians, conservation, or other vertebrates will gain a broad understanding of contemporary research.

Course Goals: The students will learn and develop an understanding of the diversity, biology, anatomy, ecology, and conservation of amphibians in a global context. Students will be introduced to current amphibian research and conservation efforts. Students will gain hands-on experience working with museum research collections from the Museum of Southwestern Biology Division of Amphibians and Reptiles.

Student Learning Outcomes: Students who complete BIOL 467 (Global Amphibian Diversity) will be able to demonstrate a coherent understanding of:

1. how to identify and classify the amphibians of the world to the taxonomic level of order ($n=3$) and family ($n=77$).
2. the systematic relationships, biogeography, relative species richness, natural history, and conservation of the amphibians of the world.
3. how to identify amphibian specimens from the Museum of Southwestern Biology to the level of taxonomic order and family.
4. the role of museum specimens, museum curation, and museum-based research.

Required Materials: Some course assignments in BIOL 467 will be completed on UNM Canvas. Student assignments will require students to access the AmphibiaWeb online database (free online resource) and other resources through UNM Libraries.

Students will need a sketchbook to use throughout the semester for recording information and creating a personalized guide to the diversity of amphibians. This sketchbook should contain at least 150 pages (75 sheets) to provide approximately 2 pages of space per family.

Course Requirements: Student performance in BIOL 467 is based on the following:

- **Laboratory Quizzes (LQ):** Most laboratory sessions will begin with a short quiz in the style of the Practical Examinations. These quizzes will include specimen-based questions as well as questions covering topics discussed in previous lectures and

laboratory sessions. Students may use their dedicated sketchbook during Laboratory Quizzes.

- **Practical Examinations (EX):** Students will complete two Laboratory Practical Exams at the mid-point and end of the semester. These Practical Examinations will include specimen-based questions as well as questions covering topics discussed in the lectures and laboratory sessions. Students may use their dedicated sketchbook during Practical Examinations.
- **Course Sketchbook (CS):** Each student will create a course sketchbook during the semester. Students will record information and observations in this sketchbook during both lecture and laboratory sessions. Sketchbooks will be collected and graded regularly throughout the semester. Sketchbook grades will be based on organization and comprehensiveness as a learning tool – student artistic talent is not a part of the evaluation process.
- **Amphibian Week Poster (AW):** Students will generate a poster highlighting the information contained in their AmphibiaWeb account for presentation to the public.
- **AmphibiaWeb Species Account (SA):** Each student will be assigned a species in the AmphibiaWeb online database that lacks a formal description. Students will work throughout the semester to gather and summarize primary literature resources to develop a draft species account for submission to AmphibiaWeb as a contributing researcher.
- **Event Participation (EC):** Students may earn extra credit by participating in optional events that will be held near the end of the semester. These events will include opportunities to share information about amphibians with the public at off-campus sites.

Student Time Management: Students are expected to spend approximately six hours working on course materials outside of their scheduled course times each week. The course instruction team for this and all biology courses are dedicated to helping our students achieve success in their courses and eventual careers. Students that feel their efforts in this course are not reflected by their assignment grades are encouraged to reach out to their course instruction team to help develop strategies to improve their performance. Students are encouraged to review the schedule of Student Assistance Drop-In Hours (available on UNM Canvas) while planning when to work on their assignments.

Attendance and Late Work: Students are expected to attend all lecture and laboratory sessions each semester to maximize their success in this course. Students are required to arrive on-time to their instruction sessions every time, and are expected to remain in class for the duration of their scheduled session. Students that arrive late may have their participation scores reduced. Students that choose to leave early may also have their participation scores reduced.

Students that miss a lecture section will receive a zero for the Lecture Participation grade associated with that lecture session. Students that miss a Practical Examination must contact their Instructor in a timely fashion to arrange an alternative.

All late work in BIOL 467 (Course Sketchbook and AmphibiaWeb Species Account assignments) will be penalized 25% per day late.

The lowest Laboratory Quiz score is dropped automatically for all students in BIOL 467.

Students who miss a lecture or laboratory session for a potentially excused reason (Medical, Bereavement, Armed Services, UNM Athletics, Traditional Obligation, etc.) must submit an absence report to the Instructor using the link on UNM Canvas in a timely fashion to arrange for an alternative assignment.

Course Grades: Students are responsible for actively tracking their grades online through UNM Learn. Students with grade concerns should address them with their course instruction team as soon as possible upon receiving graded work. All grades are considered permanent

two weeks after the grade is assigned. Students are responsible for adhering to all UNM grade policies. This course is not offered for Credit/No Credit.

Course Grading Scheme

Assignment Category	Iterations	Drops	Grade Portion
Laboratory Quizzes	11	One lowest score	10%
Practical Exams	2	None	40%
Course Sketchbook	4	None	20%
Amphibian Week	4	None	10%
Species Account	4	None	20%
Event Participation	2+	None	+1% each

Semester Grading Scheme

Grade Range	0 - 59.49	59.5 - 69.49	69.5 - 77.49	77.5 - 79.49	79.5 - 87.49	87.5 - 89.49	89.5 - 97.49	97.5+
Letter Grade	F	D	C	C+	B	B+	A	A+

UNM Accommodations Statement: UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an inclusive classroom setting, in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact Accessibility Resource Center at arcsrvs@unm.edu or 505-277-3506.

UNM Course Materials Access Statement: Your digital course materials are directly available now on the My Shelf link in Canvas. Your physical course materials, such as books and required lab/studio course kits, are available at the UNM Bookstore, and you will receive an email about how to pick them up. To simplify your course materials access, you are automatically enrolled in a Complete option at a flat rate of \$279 per semester. This will show up on your bursar bill. The Complete option covers all your required course materials for all your Albuquerque campus courses, including any graduate courses you may be taking (branch campus course materials are billed and available separately). If you are interested in course materials access for only selected courses, or if you want to opt out entirely, you will need to select the option you want in the My Shelf link in Canvas. You can change your selected option in the My Shelf link in Canvas until the registrar's "Last Day to Drop Without a 'W' Grade and 100% Tuition Refund." Make sure that you review the video, and information here to understand cost and the options for Complete (automatic enrollment), Select (take action), and Opt-out (take action).

UNM Credit-hour Statement: This is a three credit-hour course. Class meets for three 50-minute sessions of direct instruction for fifteen weeks during the Spring 2025 semester. Please plan for a minimum of six hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

UNM Respectful Conduct Expectations Statement: We are committed to building with you a positive classroom environment in which everyone can learn. We (the Course Instruction Team) reserve the right to intervene and enforce standards of respectful behavior when classroom conduct is inconsistent with University expectations [and/or classroom community agreements]. Interventions and enforcement may include but are not limited to required meetings to discuss classroom expectations, written notification of expectations, and/or

removal from a class meeting. Removal from a class meeting will result in an unexcused absence. The University of New Mexico ensures freedom of academic inquiry, free expression and open debate, and a respectful campus through adherence to the following policies: D75: Classroom Conduct, Student Code of Conduct, University Policy 2240 – Respectful Campus, University Policy 2210 – Campus Violence.

UNM Responsible Learning and Academic Honesty Statement: Cheating and plagiarism (academic dishonesty) are often driven by lack of time, desperation, or lack of knowledge about how to identify a source. Communicate with instructors and ask for help, even at the last minute, rather than risking your academic career by committing academic dishonesty. Academic dishonesty involves claiming that work created by another source is your own original work. It is a Student Code of Conduct violation that can lead to a disciplinary procedure. When you use a resource in work submitted for this class, document how you used it and distinguish clearly between your original work and the material taken from the resource.

UNM Thriving and Finding Support Statement: Students are especially successful at UNM when they take advantage of support and get involved in campus and academic life. Your MyUNM login page provides direct links to wellbeing resources, including financial capability, mental health, food, jobs, and resource centers. MyUNM will help you identify academic resources like peer tutoring and opportunities like study abroad. You can contact academic advisors and resource advisors for information and guidance via Student Hub on MyUNM. We look forward to providing you with information about academic opportunities related to our class and to helping you find support resources.

UNM UAP 2720 and 2740 Statement: Our classroom and university should foster mutual respect, kindness, and support. If you have concerns about discrimination, harassment, or violence, please seek support and report incidents. Find confidential services at LoboRESPECT Advocacy Center, the Women's Resource Center, and the LGBTQ Resource Center. UNM prohibits discrimination on the basis of sex (including gender, sex stereotyping, gender expression, and gender identity). All instructors are "responsible employees" who must communicate reports of sexual harassment, sexual misconduct and sexual violence to Compliance, Ethics and Equal Opportunity. For more information, please see UAP 2720 and UAP.

UNM Indigenous Peoples' Land and Territory Acknowledgement: Founded in 1889, the University of New Mexico sits on the traditional homelands of the Pueblo of Sandia. The original peoples of New Mexico — Pueblo, Navajo, and Apache — since time immemorial, have deep connections to the land and have made significant contributions to the broader community statewide. We honor the land itself and those who remain stewards of this land throughout the generations and also acknowledge our committed relationship to Indigenous peoples. We gratefully recognize our history.

UNM Religions and Faith Traditions Statement: The University of New Mexico promotes respect for all religions and faith traditions. Any student who is unable to attend classes or to participate in any examination, presentation, or assignment on a given day because of the observance of a major religious holiday or cultural observance, or due to related travel, is encouraged to speak with their instructor about an excused absence and opportunities to make up, without unreasonable burden, any work that has been missed.

UNM Statement Acknowledging the Labor and Sacrifices of Black Americans: UNM Statement Acknowledging the Labor and Sacrifices of Black Americans: At UNM, we respectfully acknowledge the traumatic history of brutality against and forced labor by Black Americans who have advanced our country. We are indebted to the enslaved and exploited

descendants of the African continent whose sacrifices established our U.S. infrastructure and economy, advanced civil rights, and continue to influence popular culture, agriculture, the sciences, health care, and all aspects of society. We are obligated to continuously recognize, and repair historic and current systemic oppression and injustices placed on Black Americans. We are grateful to them and their ancestors; without them, we would not be where we are today.

UNM Statement Honoring Immigrants in The United States: UNM Statement Honoring Immigrants in The United States: The United States of America is a country that is built on the strength of immigrants that came here, either voluntarily or involuntarily. Whether they look or speak differently from us, we will do our best to understand, respect, appreciate, and value their cultures and contributions, with the ultimate goal to welcome them and elicit their potential for the betterment of all societies.

Course Schedule: Spring 2026

Week	Date	Lecture and Laboratory Topics
01	Jan 20	Amphibia, Lissamphibia Laboratory: Museum of Southwestern Biology Tour
	Jan 22	Gymnophiona, Rhinatrematidae, Ichthyophiidae, Scolecomorphidae, Chikilidae, Herpelidae, Caeciliidae
02	Jan 27	Typhlonectidae, Grandisoniidae, Dermophiidae, Siphonopidae Laboratory: Lissamphibia Specimens
	Jan 29	Caudata, Cryptobranchidae, Hynobiidae, Sirenidae
03	Feb 03	Ambystomatidae, Dicamptodontidae, Salamandridae Laboratory: AmphibiaWeb Species Accounts I
	Feb 05	Proteidae, Rhyacotritonidae, Amphiumidae, Plethodontidae
04	Feb 10	Anura, Ascaphidae, Leiopelmatidae Laboratory: Caudata Specimens
	Feb 12	Bombinatoridae, Alytidae, Rhinophrynidae, Pipidae
05	Feb 17	Scaphiopodidae, Pelodytidae, Megophryidae, Pelobatidae Laboratory: Anura Specimens I
	Feb 19	Heleophrynidae, Calyptocephalellidae, Myobatrachidae
06	Feb 24	Rhinodermatidae, Alsodidae, Hylodidae, Batrachylidae, Cycloramphidae, Telmatobiidae Laboratory: Vocalization in Anura
	Feb 26	Ceratophryidae, Hemiphractidae, Hylidae
07	Mar 03	Bufonidae, Leptodactylidae, Odontophrynidae Laboratory: Anura Specimens II
	Mar 05	Allophrynidae, Centrolenidae
08	Mar 10	Mid-semester Review Laboratory: Mid-semester Review
	Mar 12	Practical Examination 1
09	Mar 16 – Mar 20	Spring Break – No Class
10	Mar 24	AmphibiaWeb Species Accounts II Laboratory: AmphibiaWeb Species Accounts II
	Mar 26	Aromobatidae, Dendrobatidae
11	Mar 31	Ceuthomatidae, Eleutherodactylidae, Brachycephalidae, Craugastoridae, Strabomantidae Laboratory: Anura Specimens III
	Apr 02	Nasikabatrachidae, Sooglossidae
12	Apr 07	Microhylidae Laboratory: Amphibian Week Posters
	Apr 09	Arthroleptidae, Hyperoliidae, Brevicipitidae, Hemisotidae
13	Apr 14	Odontobatrachidae, Phrynobatrachidae, Ptychadenidae Laboratory: Anura Specimens IV
	Apr 16	Conrauidae, Petropedetidae, Pyxicephalidae
14	Apr 21	Micrixalidae, Nyctibatrachidae, Ranixalidae, Ceratobatrachidae Laboratory: AmphibiaWeb Species Accounts III
	Apr 23	Dicroglossidae, Ranidae
15	Apr 28	Rhacophoridae Laboratory: Anura Specimens V
	Apr 30	Mantellidae
16	May 05	End-semester Review
		Laboratory: End-semester Review

	May 07	Practical Examination 2
17	May 11 - May 15	Final Examinations Week - No Lecture