

**Biology 6181 Seminar: Echolocation
Winter Mini-Session 2021**

Dr. Loren K. Ammerman
Office: 003B, Cavness Science Building
Class meeting time: Monday-Thursday 10:00-11:15 am
Office Hours: by appointment

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STUDENT LEARNING OUTCOMES: Students successfully completing this class will be able to:

1. Discuss with their peers the interpretation of and reaction to the assigned reading material/topics.
2. Relate discussion topics to their own professional development.

REQUIRED BOOK:

None, readings will be posted on Blackboard for discussion each day.

ATTENDANCE:

Class begins on Jan. 4th via Blackboard Collaborate at 10:00am. You are expected to login and attend all scheduled classes and be able to share your camera during class. More than 2 unexcused absences will result in the loss of a letter grade from your final average. More than 3 unexcused absences will result in automatic failure of the course. The last day to drop this course with a “W” is January 15.

REQUIREMENTS:

Each class period there will be assigned readings. Each student is expected to come to class prepared to LEAD a class discussion of the assigned topic/reading. Discussion leaders will be selected at random each week. In order to receive an “A” in this course, you must do some outside research that is relevant to the topic of the week and present it during the discussion. The outside information could take the form of a research article, blog, book, website, news article, training documents, or other possible sources. You should be prepared to share the information you located each week even if you are not the discussion leader. For credit, you must provide the instructor with a short summary paragraph (at least half a page typed – no more than 1 page, double-spaced) explaining the relevance of your outside research to the topic. Provide also the citation for any of the outside information you examined. These summaries are due BEFORE the class period begins by submitting through Bb assignment link.

Every student must check their ASU e-mail address regularly and use the Blackboard website (<http://blackboard.angelo.edu>) to retrieve grades and to receive assigned reading.

ASSESSMENT:

Your grade in this course will be determined by your participation in class discussion (your contributions will be assessed by the instructor) and from points earned on your additional research. Each student will begin the course with a B and can raise it to an A by being an active participant and doing at least 8 outside research assignments. Your grade will drop to a C if you do not do at least 5 of the outside research assignments or if you are not an active participant in discussion. In addition, letter grades will be modified as necessary by the attendance requirements previously listed.

ORIENTATION TAB IN BLACKBOARD:

Use this link/button in Blackboard to review *Academic Policies, Accessibility Help, Academic Support* and *Student Health and Safety*.

All classes will meet online. The first day we will meet at 10:00 am using the course room in Blackboard Collaborate, but might switch to Zoom classes later in the week. You must have suitable internet signal to join the class with audio and video.

TENTATIVE CLASS SCHEDULE

Articles for Discussion - BIOLOGY 6181	Assigned reading
Jan. 4 a) Introduction to Course b) Bat Echolocation Research	Brigham et al. 2002, p. 2-12
Jan. 5 a) Echolocation in Dolphins and Bats b) Parallel evolution of auditory genes	Au and Simmons 2007; Shen et al. 2012
Jan. 6 Oilbirds produce Echolocation signals	Brinklov et al. 2013; Brinklov et al. 2017
Jan. 7 Echolocation in Humans	Thaler and Goodale 2016; Cooper et al. 2020
Jan. 11 a) Automatic Identification Methods b) Automatic Identification of Bat Species	Loeb et al. 2015, p. 20-28 and 35-40; Lemen et al. 2015
Jan. 12 Acoustic Surveys Winter Acoustic Activity	Findlay and Barclay 2020; Schwab and Mabee 2014
Jan. 13 a) Acoustic Guide in Bat Pollinated Flowers b) Finding Flowers in the Dark	Helversen and Helversen 1999; Gonzalez-Terrazas et al. 2016
Jan. 14 Lek Courtship Behavior in Bats	Rodriguez-Herrera et al. 2020
Jan. 18 MLK Holiday – no class	
Jan. 19 Acoustic Deterrents Reduce Fatalities at Wind Turbines	Weaver et al. 2020
Jan. 20 a) Interclick interval variation in dolphins b) Monitoring dolphin species	Tellechea 2020; Caruso et al. 2020
Jan. 21 Challenges for PAM in ecological assessment	Gibb et al. 2018