

# BIO 485 Behavior and Morphology – Fall 2020

**Instructor: Dr. Ian N. Cost**

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**Office Hours: Monday 10-11**

**Tuesday 10-11 or by appointment**

## **Course Description:**

This seminar explores the anatomical structures underlying behaviors through a comparative study of avian (bird) species. Birds are an ideal group of terrestrial vertebrates to study behavior and its underlying anatomy in a comparative context because of their global distribution and highly variable ecological niche participation despite overall similar morphology. Topics that will be discussed include the biomechanics of locomotion, dietary strategies, feather color and structure, mating and courtship, avian intelligence, and the avian cardiovascular system. Students are expected to read, lead, and discuss journal articles pertinent to the topics assigned during journal club style class sessions and will work on a semester-long academic project. This project will consist of a paper analyzing and synthesizing an important aspect of avian behavior and its underlying anatomical structure.



## **Student Goals and Class Objectives:**

1. Students will be able to read, discuss, and communicate scientific information in a meaningful and appropriate manner.
2. Identify the basic principles of how anatomical structures influence and are influenced by behaviors.
3. Interpret the results of different sources of scientific literature addressing complex questions of evolution, biomechanics, and functional morphology.

**Required Texts:** Assigned journal readings will be provided on Canvas throughout the semester.

## **Recommended:**

Gill, F. B., Prum, R. O., Robinson, S. K. 2019. Ornithology, 4<sup>th</sup> Edition. Macmillan Learning.

Knisley, K. 2017. Student Handbook for Writing in Biology. Macmillan Learning.

## **Attendance:**

Lecture attendance requirements are outlined in the Department of Biology (DoB) Attendance Policy posted [here](#).

## **Class Discussions and Professionalism:**

Class discussions will be conducted on various topics throughout the semester. These will require reading outside of class of scholarly articles. You will be reminded in class prior as well as on Canvas when these readings are available. Class discussions will be conducted respectfully and professionally. We will use proper terminology to discuss topics. Each student is expected to be respectful of their peers and to hold everyone, including me, responsible for properly addressing students by their chosen names, pronouns, and respective titles and using proper terminology in discussions. If any student wishes to discuss class discussion, content, or any other aspect of class with me they are welcome and encouraged to do so. If you feel uncomfortable speaking with me for any reason, I encourage you to contact the [Office of the Dean of Students](#) with your concerns.

## **Class Discussion and Readings:**

Participation in this class is mandatory and will include journal club style discussions of scientific articles. Assigned readings will be disseminated on Canvas. Background information will be discussed in a generalized survey style, with class presentations by the instructor providing adequate background to discuss related articles.

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## Quizzes:

Quizzes assessing student knowledge of the material covered in each unit of study will be taken each Monday prior to the start of class. These quizzes will be worth 10 points each, for a total of 80 points. This includes a pre-quiz the first week of class (details will be communicated prior to the first week of class) and the peer review exercise.

## Presentations:

Students will be assigned to lead discussions throughout the semester. Early class meetings will provide a background in ornithology and will be led by the instructor. During the week prior to the first journal club, students will sign up for topics to present. The student will be responsible for paper selection for the second discussion they lead and will meet with the instructor to go over papers they wish to present. The student will be responsible for teaching a short lecture (approximately half the class period) on the subject of their choosing and assigned readings to discuss in that context. Students will work with the instructor to assign appropriate readings to the class. The student directed presentation is worth 100 points. Professionalism, content, knowledge, and the lesson's clarity will be considered when assigning points.

## Observation Papers:

All students are expected to write a paper for this class. In this abbreviated semester, this paper will be a short, but intensive study of behavior and anatomy. Students will choose a topic concerning birds wherein they discuss the anatomy and related behavior(s) in appropriate detail. Primary source literature will be used for this assignment to discuss and explain observations made during week 1. Topics for the paper and an initial annotated bibliography are due during week 2. A first draft (**NOT** rough) will be due during the 3<sup>rd</sup> week of class. During the 4<sup>th</sup> week of class we will discuss peer review and scholarly articles. On the Monday of the 5<sup>th</sup> week students will submit a second draft, which will be peer reviewed. Students will have 2 weeks to review their assigned paper and attach constructive comments at which point they will be submitted to the instructor, returned to the author, and a final copy will be due the date of the final exam. Drafts are worth 60 points total (20 points each), peer review is worth 25 points, the topic is worth 5 points, and the initial bibliography is worth 10 points.

## 4<sup>th</sup> Hour of Quality:

All students will be required to do work outside of the normal scope of class to fulfill 4<sup>th</sup> Hour obligations. In this course this will take the form of maintaining a journal documenting avian behaviors. Students will be expected to keep a hard copy that they can take out onto campus, on a walk to the grocery store, a hike, etc. A total of 7 entries (5 pts. each) will be created analyzing behaviors students observe, including potential meanings/targets of behaviors (territorialism, mate selection, etc.), duration of behavior, and observable interactions with other animals resulting from or instigating the observed behavior. A further 5 pts. per entry will be given for a video entry version of the field journal. The method of delivery will be discussed in class. This assignment will be worth 70 total points for all entries. Entry specifics will be discussed during the first meeting of class.

## Final Presentation/Test:

The final exam period will be used to present short summaries of each student's research paper in a miniature research conference. Student presentations will last approximately 5 minutes and may include short PowerPoint presentations. Students may ask questions of the presenter, time permitting. This presentation is worth 150 points.

## Grading:

The point breakdown for the course will be as follows:

Quizzes	- worth 80 points
1 <sup>st</sup> Presentation:	- worth 100 points
Observation Paper:	- worth 100 points
4 <sup>th</sup> Hour Journal	- worth 70 points
Final Presentation/Test:	- <u>worth 150 points</u>
	<b>Total 500 points</b>

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### Academic Support Services:

Academic support resources are available to students at no charge through the Academic Learning Center, the Writing Center and Disability Services. The Academic Learning Center offers course-specific tutoring, academic skills workshops, hands on learning strategies instruction, and academic counseling to supplement faculty advisement. The Writing Center offers tutoring to assist with writing and reading support for any class. The Student Accessibility and Advocacy office is the source for impairment-related accommodations consistent with the ADA and its amendments. Students who receive accommodations from the SAA office should meet with course instructors privately and in a timely manner to discuss the Academic Accommodation Letter (AAL) provided by that office. **Please note that IEPs and 504 plans do not apply to college level courses.** All three offices are in the administration building. For help or further information, contact the ALC at [academiclearningcenter@albright.edu](mailto:academiclearningcenter@albright.edu) or 610-921-7662; the WC at [writingcenter@albright.edu](mailto:writingcenter@albright.edu) or 610-921-7540; and the Student Accessibility and Advocacy office at [SAA@albright.edu](mailto:SAA@albright.edu) or 610-929-6639.

### Academic Integrity

The College policy on dishonesty as stated in the section “Academic Dishonesty Policy” in the current Albright College Catalog applies to all aspects of this course, including exams and papers. Academic dishonesty is taking credit for another person’s work and attempting to pass it off as your own. It includes: 1) copying from another student during exams and quizzes; 2) allowing someone to copy from you or providing someone with a copy of your work that results in plagiarism; 3) Presenting someone else’s ideas as your own without express permission and crediting them; 4) Plagiarizing (copying) material from books, articles, and electronic sources for direct use in your work; 5) using cheat sheets, notes, cell phones, etc. to gain outside information during a test or quiz. A student charged with academic dishonesty will be given written or oral notice of the charge, will receive an F on the assignment in question, and the case will be referred to the Provost. At the Instructors' discretion, the student may receive an F for the course. Repeat offenses, in one class or different classes can lead to more severe penalties (e.g. academic dismissal). Please familiarize yourself with this policy.

## Class Schedule Follows on Next Page

## BIO 485 Behavior and Morphology – Fall 2020: Calendar

Week	Topic	Readings	In Class	What is Due
1	Course Introduction, what is a bird?	Gill Chs. 1 – 3		<b>Pre-Quiz</b>
	Readings on Avian diversity	TBA		
	Readings on Avian evolution/systematics	TBA; Knisley Ch. 2		
2	Flight and basic bird functions	Gill Chs. 4 – 6	<b>Quiz</b>	<b>Paper Topics</b>
	Readings on Avian feathers and flight	TBA		
	Readings on Avian physiology	TBA		<b>Bibliography Due</b>
3	Behavior and the lives of birds	Gill Chs. 7 – 11	<b>Quiz</b>	
	Readings on brain morphology/intelligence	TBA		
	Readings on vocalization	TBA		<b>Draft 1 Due</b>
4	Peer Review Discussion	Knisley Ch. 3 & Ch. 5	<b>Quiz</b>	
	Peer Review Exercise Discussion	TBA		<b>Exercise Due</b>
	Talking about our field journals	TBA		
5	Avian Life History: Mating systems and styles	Gill Chs. 12 – 14	<b>Quiz</b>	
	Readings on mating systems	TBA		
	Readings on functional anatomy of reproduction	TBA		<b>Peer Review Draft Due</b>
6	Avian Life History: Nesting and parenting	Gill Chs. 15 – 17	<b>Quiz</b>	
	Readings on nest construction behaviors	TBA		
	Readings on parent and hatchling behavior	TBA		<b>Peer Reviews Returned</b>
7	Populations and Conservation	Gill Chs. 18 – 19	<b>Quiz</b>	
	Readings on species and populations	TBA		
	Readings on social systems/hierarchy	TBA		
Final	<b>Final Presentations Due</b>	Knisley Ch. 8		<b>Final Draft Due</b>

**Legend:**

**Red = Graded Class Activity**

**Blue = Paper Related Activity**