

# Course Approval Form

For instructions:  
<http://registrar.gmu.edu/facultystaff/catalog-revisions/course/>

**Action Requested:** (definitions available at website above)

Create NEW     Inactivate  
 Modify (check all that apply below)

**Course Level:**

Undergraduate     Graduate

Title (must be 75% similar to original)     Repeat Status     Prereq/coreq     Grade Mode  
 Credits     Schedule Type     Restrictions     Other: \_\_\_\_\_

**College/School:** College of Science    **Department:** Biology  
**Submitted by:** Arndt F. Laemmerzahl    **Ext:** x3-5608    **Email:** alaemmer@gmu.edu

**Subject Code:** BIOL    **Number:** 437    **Effective Term:**  Fall     Spring     Summer  
 (Do not list multiple codes or numbers. Each course proposal must have a separate form.)    Year 2017

**Title:** Current Ornithology    **Fulfills Mason Core Req?** (undergrad only)  
 Banner (30 characters max w/ spaces) \_\_\_\_\_  
 New Ornithology     Currently fulfills requirement  
 Submission in progress

**Credits:** (check one)  Fixed → 4    **Repeat Status:** (check one)  Not Repeatable (NR)  
 Variable → to     Repeatable within degree (RD) →    Max credits allowed: 4  
 Lec + Lab/Rct → 0 or     Repeatable within term (RT) →

**Grade Mode:** (check one)  Regular (A, B, C, etc.)    **Schedule Type:** (check one)  Lecture (LEC)     Independent Study (IND)  
 Satisfactory/No Credit     Lab (LAB)     Seminar (SEM)  
 Special (A, B, C, etc. +IP)     Recitation (RCT)     Studio (STU)  
LEC can include LAB or RCT if linked sections will be offered

**Prerequisite(s)** (NOTE: hard-coding requires separate Prereq Checking form; see above website): BIOL 308 or equivalent or POI    **Corequisite(s):**

**Restrictions Enforced by System:** Major, College, Degree, Program, etc. Include Code(s).    **Equivalencies** (check only as applicable):  
 YES, course is 100% equivalent to EVPP 437  
 YES, course renumbered to or replaces \_\_\_\_\_

**Catalog Copy** (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	Notes (List additional information for the course)
Study of evolution, systematics, physiology, ecology and behavior of birds, emphasizing field work.	
Indicate number of contact hours: _____ Hours of Lecture or Seminar per week: 3    Hours of Lab or Studio: 2:40	
When Offered: (check all that apply) <input type="checkbox"/> Fall <input type="checkbox"/> Summer <input checked="" type="checkbox"/> Spring	

**Approval Signatures**

\_\_\_\_\_  
 Department Approval    Date 10/26/16    College/School Approval    Date

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

**Undergraduate or Graduate Council Approval**

\_\_\_\_\_  
 UGC or GC Council Member    Provost's Office    UGC or GC Approval Date

**Biology 437, Ornithology**

**Date of Departmental approval:**

**October, 20, 2016**

**New course:**

**Course designation is to cross list BIOL 537, Ornithology, which has been taught for many years at GMU. As such, course is almost identical to BIOL 537.**

**The main reason for the cross listing is to make more organismal courses available to undergraduate students. (Ornithology used to be solely an undergraduate course).**

**Relationship to existing courses:**

**Same as the current course, BIOL 537 as well as EVPP 537 and EVPP 437 (proposed in conjunction with this course).**

**Semester of initial offering:**

**Spring, 2018**

**Proposed Instructors:**

**Dr. David Luther**

**See attached syllabus.**

## Ornithology BIO 537

Lecture: TBA

Lab: TBA, most weeks we will go on field trips and meet at the site of the field trip. Directions will be emailed earlier in the week. When lab takes place on campus we will meet in Expl 509.

Professor: Dr. Luther

Office: 1216 Exploratory Hall

Email: [dluther@gmu.edu](mailto:dluther@gmu.edu)

Office Hours: TBA

Teaching Assistant: Justin Cooper

Email: [wcooper2@gmu.edu](mailto:wcooper2@gmu.edu)

### Grades

100pts 20% written paper

100pts 20% oral presentation

100pts 20% laboratory assignments

50pts 10% laboratory final exam

125pts 25% homework

25pts 5% classroom participation

500pts Total

### Class structure:

Luther lecture 45-60 min.

Guest lecture 30-60 min.,

Student led presentations / seminar-like discussion 30 min

### Course objectives:

**LECTURE** Students will learn the basic principles of ornithology and how they relate to the disciplines of ecology, behavior, evolution, physiology, and conservation biology. In addition, students will read and report on scientific studies in the primary literature for a greater understanding of the scientific research on birds, data analysis, hypothesis testing, and the scientific process.

**LAB** Students will be taught how to identify birds by sight and sound, with an emphasis on birds of the eastern United States. Students will also be exposed to field skills that are used to quantify avian richness, abundance, and population density.

### Course Content:

Ornithology BIO 537 will focus on the ecology, evolution, physiology, behavior and conservation of birds. The classroom section of this course will be split among lectures by the professor, guest lecturers, and oral presentations by the students. The laboratory section of the course will focus on the identification and behavior of birds in Northern Virginia. We will meet Friday mornings for bird watching field trips and laboratory exercises that focus on bird identification and avian ecology.

## **Course Materials:**

There is no assigned textbook for the course. Instead we will be reading articles from the primary literature. You are expected to read all assigned material before attending class. However, you are required to buy your own field guide for the lab (you can purchase any one that you chose, but I recommend National Geographic or Peterson Birds of North America).

## **Written paper:**

The paper will be due TBA. The paper will be to write a species description for the Neotropical birds website <http://neotropical.birds.cornell.edu/portal/home>. All of the birds of the tropical new world are being assessed and species descriptions are being compiled. As your assignment you will select a species, that doesn't already have a species account and write an account for that species. You can select most any species that doesn't already have an account but need to check with me before starting so that I can confirm an account isn't already in progress by someone else. In addition to the grade for the course your species description might be added to the Cornell website for neotropical birds.

Details of the paper assignment will vary somewhat depending on student status (graduate vs. undergraduate).

## **Oral presentation:**

Students will give an oral presentation on an avian group chosen during the first week of class. For the oral presentation you will search the primary literature to give an overview of the chosen group as well as a detailed analysis of the gaps in knowledge surrounding the group and importance of studies on the group to other disciplines (if any). Students will also chose 1 paper from the primary literature that they will email to the whole class to read in preparation of the class discussion that follows the oral presentation.

You will prepare a 10-minute PowerPoint presentation on your chosen topic. You will also provide a ½ - 1 page summary of the topic and a list of references as a handout to give to the class on the day of your presentation. One week prior to your presentation you will email 1 journal article to the whole class for them to read before your presentation. After your presentation is complete you will lead the class in a discussion of the topic that focuses on your ppt but also the 1 article that you assigned.

Details of the oral presentation will vary somewhat depending on student status (graduate vs. undergraduate)

A successful presentation will begin with a big picture introduction to the group and associated insights to ornithology, ecology, physiology, morphology, behavior, or conservation based on studies of this group. The introduction will include definitions of terms and important concepts. Next the presentation will specifically discuss the group and give an analytical summary of what is known about the group as well as what is not known about the group. Finally the presentation will summarize the paper that the presenter assigned. Topics of a good presentation could include: the number of genera and species, biogeographical location, habitat preferences, specific morphological, physiological, or behavioral adaptations to the group, mating system, conservation status, and more depending on what is known about the group.

## **Laboratory assignments:**

Notes on behavior and identification of species observed during the laboratory field trips. The final exam will be a field test of bird identification by sight and sound.

**Labs:**

Dress appropriately for walking outdoors. Be ready for cold and/or wet weather in the winter and mosquitoes in the spring. It is easier to stay warm than get warm so bring extra clothes and take some off rather than not bringing enough. Since the DC region has so many ticks and many of them seem to have Lyme's Disease, after each lab you should check yourself for ticks and tick bites.

**Homework:** Each week write a summary of one of the articles that was assigned:

Summarize the assigned paper. The summary should include a description of the following information:

1. The hypothesis (or hypotheses) tested,
2. Essential concepts in the paper,
3. Methods used to test the hypotheses,
4. Results of the study/ major findings.

In addition include your own thoughts about the paper. For example:

1. What are the big picture implications of the study?
2. Were the methods appropriate for testing the stated hypothesis?
3. Would you have done it differently or the same?
4. What could be done to improve the study?

**STUDENTS WITH DISABILITIES:** We are happy to accommodate, in any way we can, students with disabilities. If you feel this would be helpful to you, you must contact the instructor as well as the Disability Resource Center (DRC) at 993-2474. All academic accommodations must be arranged through the DRC.

**HONOR CODE:** The Biology Department strongly enforces the GMU Honor Code. Students are expected to read and adhere to the George Mason University Honor Code. **Ignorance of the Honor Code is no excuse for infractions thereof.** All work done in lecture and lab (exams, data sheets, quizzes, etc.) must be the sole work of the student. Copying data, falsifying data, cheating on exams and quizzes, failing to credit the work of others are all violations of the Honor Code and will be dealt with most seriously.

## **Class Schedule Spring 20xx**

*(All lab field trip locations are tentative and may change the week of the lab.  
Guest lectures are also subject to change.)*

### **Jan xx – Introduction, avian diversity, and biogeography**

Lab – Exploratory Hall L509. Introduction to lab, and look for birds on campus.

### **Jan xx - Species, speciation, and systematics**

Student presentation – Jigsaw of assigned reading

Lab – Smithsonian Natural History Museum – Bird Collections

### **Feb xx - Adaptations for flight and feather structure**

Student presentation – Jigsaw of assigned reading

Lab – Dyke marsh, Alexandria

### **Feb xx - Reproduction, nesting and the egg**

Guest speaker – Dr. Chesser – Smithsonian Natural History Museum (speciation in the Amazon)

Student presentation –

Lab – Manassas National Battlefield NP

### **Feb xx – Form, function, and physiology**

Guest speaker – Dr. James – Smithsonian Natural History Museum (speciation and adaptive radiations)

Student presentation –

Lab – Occoquin NWR, Woodbridge

### **Feb xx – Bird senses, brains, and intelligence**

Guest speaker – Dr. Dove – Smithsonian Natural History Museum (evolution and function of feathers)

Student presentation –

Lab – Exploratory Hall L509 Avian Song and Sound Analysis

### **Mar xx - No class or lab because of spring break**

### **Mar xx - Spring break: no class or lab**

### **Mar xx – Vocalizations and communication**

Guest speaker – none

Student presentation –

Lab – Sky Meadows State Park

### **Mar xx – Annual cycles; molt, migration, and navigation**

Guest speaker – Dr. Sillett – Smithsonian Migratory Bird Center

Student presentation -

Lab – Huntley meadows, Alexandria

### **April xx – Life History; reproductive success**

Guest speaker – Dr. Lovejoy – GMU (forest fragmentation)

Student presentation –

Lab – Dyke Marsh, Alexandria

**April xx - Populations, species, and communities**

Guest speaker – Amy Johnson – Grassland bird communities, ecology, and conservation

Student presentation –

Lab – Prince William Forest, Woodbridge

**April xx – Social behavior, mates, and breeding systems**

Guest speaker –

Student presentation –

Lab – Occoquin NWR, Woodbridge

**April xx – Conservation and populations**

*Guest speaker* – Dr. Lebbin – American Bird Conservancy (avian conservation in the Americas)

Student presentation –

Lab – Manassas Historical Battlefield NP

**April xx – Conservation and climate change**

Guest Speaker – Dr. Beehler – Smithsonian Natural History Museum - Exploring New Guinea and its Birds of Paradise

Student presentation -

Lab – TBA (final exam)