

RECEIVED

MAR 31 2015

OFFICE OF THE
SENATE COUNCIL**1. General Information**

1a. Submitted by the College of: ARTS & SCIENCES

Date Submitted: 1/16/2015

1b. Department/Division: Biology

1c. Contact Person

Name: Ruth E Beattie

Email: rebeat1@uky.edu

Phone: 257-7647

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

1d. Requested Effective Date: Semester following approval

1e. Should this course be a UK Core Course? No

2. Designation and Description of Proposed Course

2a. Will this course also be offered through Distance Learning?: No

2b. Prefix and Number: BIO 447

2c. Full Title: Animal Senses

2d. Transcript Title: Animal Senses

2e. Cross-listing:

2f. Meeting Patterns

LECTURE: 3

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 3

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

2j. Course Description for Bulletin: Advanced study on how animals use sensory abilities to communicate, navigate, and detect prey, predators and mates. Focus will be on extreme and unusual sensory systems such as echolocation, electroreception, and magnetoreception, as well as vision, smell, touch, and hearing.

2k. Prerequisites, if any: BIO 350 or PGY 412G or permission of Instructor

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Spring,

Will the course be offered every year?: Yes

If No, explain:

5. Are facilities and personnel necessary for the proposed new course available?: Yes

If No, explain:

6. What enrollment (per section per semester) may reasonably be expected?: 25 - 30

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: Yes

Will it be of interest to a significant number of students outside the degree pgm?: Yes

If Yes, explain: This course will be of interest to students in the existing neuroscience minor and the new neuroscience major. Paperwork for this new neuroscience major has been separately submitted for approval.

8. Check the category most applicable to this course: Relatively New – Now Being Widely Established,

If No, explain:

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?: Yes

If YES, name the proposed new program: Neuroscience major

b. Will this course be a new requirement for ANY program?: No

If YES, list affected programs:

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500?: No

b. The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from **10.a** above) are attached: Yes

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?
2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.
3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.
4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?
If yes, which percentage, and which program(s)?
5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?
6. How do course requirements ensure that students make appropriate use of learning resources?
7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.
8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?
9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO
If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.
10. Does the syllabus contain all the required components? NO
11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|VCASS2|Vincent Cassone|BIO 447 NEW Dept Review|20150126

SIGNATURE|ACSI222|Anna C Harmon|BIO 447 NEW College Review|20150303

SIGNATURE|JMETT2|Joanie Ett-Mims|BIO 447 NEW Undergrad Council Review|20150331

Courses	Request Tracking
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New Course Form

<https://myuk.uky.edu/sap/bc/soap/rfc?services=>

[Open in full window to print or save](#)

Generate R

Attachments:

Upload File

ID	Attachment
Delete 4614	BIO 447 UGC Review Checklist.docx
Delete 4744	BIO 447 syllabus revised.doc

1

Select saved project to retrieve...

(*denotes required fields)

1. General Information

- a. * Submitted by the College of: Submission Date:
- b. * Department/Division:
- c.
- * Contact Person Name: Email: Phone:
- * Responsible Faculty ID (if different from Contact): Email: Phone:
- d. * Requested Effective Date: Semester following approval OR Specific Term/Year ¹:
- e. Should this course be a UK Core Course? Yes No
- If YES, check the areas that apply:
- Inquiry - Arts & Creativity Composition & Communications - II
- Inquiry - Humanities Quantitative Foundations
- Inquiry - Nat/Math/Phys Sci Statistical Inferential Reasoning
- Inquiry - Social Sciences U.S. Citizenship, Community, Diversity
- Composition & Communications - I Global Dynamics

2. Designation and Description of Proposed Course.

- a. * Will this course also be offered through Distance Learning? Yes ¹ No
- b. * Prefix and Number:
- c. * Full Title:
- d. Transcript Title (if full title is more than 40 characters):
- e. To be Cross-Listed ² with (Prefix and Number):
- f. * Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours³ for each meeting pattern type.
- | | | | |
|--|--|---------------------------------|---------------------------------|
| <input type="text" value="3"/> Lecture | <input type="text"/> Laboratory ¹ | <input type="text"/> Recitation | <input type="text"/> Discussion |
| <input type="text"/> Indep. Study | <input type="text"/> Clinical | <input type="text"/> Colloquium | <input type="text"/> Practicum |
| <input type="text"/> Research | <input type="text"/> Residency | <input type="text"/> Seminar | <input type="text"/> Studio |
| <input type="text"/> Other | If Other, Please explain: | | |
- g. * Identify a grading system:
- Letter (A, B, C, etc.)
- Pass/Fail
- Medicine Numeric Grade (Non-medical students will receive a letter grade)
- Graduate School Grade Scale
- h. * Number of credits:
- i. * Is this course repeatable for additional credit? Yes No
- If YES: Maximum number of credit hours:
- If YES: Will this course allow multiple registrations during the same semester? Yes No

j. * Course Description for Bulletin:

Advanced study on how animals use sensory abilities to communicate, navigate, and detect prey, predators and mates. Focus will be on extreme and unusual sensory systems such as echolocation, electroreception, and magnetoreception, as well as vision, smell, touch, and hearing.

k. Prerequisites, if any:

BIO 350 or PGY 412G or permission of Instructor

i. Supplementary teaching component, if any: Community-Based Experience Service Learning Both3. * Will this course be taught off campus? Yes No

If YES, enter the off campus address:

4. Frequency of Course Offering.

a. * Course will be offered (check all that apply): Fall Spring Summer Winter

b. * Will the course be offered every year? Yes No

If No, explain:

5. * Are facilities and personnel necessary for the proposed new course available? Yes No

If No, explain:

6. * What enrollment (per section per semester) may reasonably be expected? 25 - 30

7. Anticipated Student Demand.

a. * Will this course serve students primarily within the degree program? Yes No

b. * Will it be of interest to a significant number of students outside the degree pgm? Yes No

If YES, explain:

This course will be of interest to students in the existing neuroscience minor and the new neuroscience major. Paperwork for this new neuroscience major has been separately submitted for approval.

8. * Check the category most applicable to this course:

- Traditional – Offered in Corresponding Departments at Universities Elsewhere
 Relatively New – Now Being Widely Established
 Not Yet Found in Many (or Any) Other Universities

9. Course Relationship to Program(s).

a. * Is this course part of a proposed new program? Yes No

If YES, name the proposed new program:

Neuroscience major

b. * Will this course be a new requirement⁵ for ANY program? Yes No

If YES⁵, list affected programs::

10. Information to be Placed on Syllabus.

a. * Is the course 400G or 500? Yes No

If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in 10.b. You must include: (i) identify additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR

b. * The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable above) are attached.

¹³ Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

¹⁴ The chair of the cross-listing department must sign off on the Signature Routing Log.

In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, are two hours per week for a semester for one credit hour. (from SR 5.2.1)

You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.

In order to change a program, a program change form must also be submitted.

Rev 8/09

Submit as New Proposal Save Current Changes

General Course Information

- Full and accurate title of the course
- Departmental and college prefix
- Course prefix, number and section number
- Scheduled meeting day(s), time and place

Instructor Contact Information (if specific details are unknown, "TBA" is acceptable for one or more fields)

- Instructor name
- Contact information for teaching/graduate assistant, etc.
- Preferred method for reaching instructor
- Office phone number
- Office address
- UK email address
- Times of regularly scheduled office hours and if prior appointment is required

Course Description

- Reasonably detailed overview of the course (course description should match on syllabus and eCATS form)
- Prerequisites, if any (should match on syllabus and eCATS form)
- Student learning outcomes
- Course goals/objectives
- Required materials (textbook, lab materials, etc.)
- Outline of the content, which must conform to the Bulletin description
- Summary description of the components that contribute to the determination of course grade
- Tentative course schedule that clarifies topics, specifies assignment due dates, examination date(s)
- Final examination information: date, time, duration and location
- For 100-, 200-, 300-, 400-, 400G- and 500-level courses, numerical grading scale and relationship to letter grades for undergraduate students
- For 400G-, 500-, 600- and 700-level courses, numerical grading scale and relationship to letter grades for graduate students. (Graduate students cannot receive a "D" grade.)
- Relative value given to each activity in the calculation of course grades (Midterm=30%; Term Project=20%, etc.)
- Note that undergraduate students will be provided with a Midterm Evaluation (by the midterm date) of course performance based on criteria in syllabus
- Policy on academic accommodations due to disability. Standard language is below:
 If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Course Policies

- Attendance
- Excused absences
- Make-up opportunities
- Verification of absences
- Submission of assignments
- Academic integrity, cheating & plagiarism
- Classroom behavior, decorum and civility
- Professional preparations
- Group work & student collaboration

UGE Review () Any attendance policy? How is participation grade determined?
Committee Review () Comments

Animal Senses BIO 447

Instructor: ROBIN COOPER , Ph.D.

Office: BS 226

Office Hours: Mon and Wed 2.00pm – 4.00pm or by appointment

Office Location: Biology room 226

Office Phone: 859-257-5950

E-mail: RLCOOP1@email.uky.edu

Course Description:

Advanced study on how animals use sensory abilities to communicate, navigate, and detect prey, predators and mates. Focus will be on extreme and unusual sensory systems such as echolocation, electroreception, and magnetoreception, as well as vision, smell, touch, and hearing.

Prerequisite: BIO 350 or PGY 412 or permission of instructor.

Class Meeting Times: Tue and Thurs 9:30 to 10:45 AM BS 11

Texts - Required.

Howard C. Hughes, **Sensory Exotica: A World beyond Human Experience** (Paperback), 978-0262582049, The MIT Press.

<http://www.amazon.com/Sensory-Exotica-World-beyond-Experience/dp/026258204X/>

Texts - Recommended:

1. Gunther K. H. Zupanc, **Behavioral Neurobiology: An Integrative Approach**, 978-0198700562, Oxford University Press, USA. This text will provide background on the physiology of nervous systems as well as provide additional explanation of sensory systems with more figures. It is highly recommended for those students with little background in neurophysiology.

2. David Eagleman. Incognito: **The Secret Lives of the Brain** Publisher: Pantheon (May 31, 2011) English, ISBN-10: 0307377334; ISBN-13: 978-0307377333

Supplementary Materials: Readings from the primary literature will be assigned on occasion. These articles will be posted on Blackboard for you to download and print.

Course Websites: Blackboard: [syllabus, course announcements, study advice, class notes]

Tentative Class Schedule: (sample for a previous Spring Semester)
Class Topics, due dates, Relevant Text Material

January 10- Introduction to sensory systems & signals; Library research methods
TEXT Hughes 1-3 (Cooper).

January 15- (Cooper) Sound, hearing & bat echolocation, TEXT Hughes 4

January 17(Cooper) Sound, hearing & bat echolocation, TEXT Hughes 4

January 22(Cooper) Biosonar & avoidance, TEXT Hughes 5-7

January 24 (Cooper) Biosonar & avoidance, Paper1 discussion, **Quiz 1**

January 29 (Cooper) Navigation & compasses, TEXT Hughes 8-9

January 31 (Cooper) Navigation & compasses, **Abstract of a topic due**

February 5 (Cooper) Proprioceptors, Handouts and ppt will be posted

February 7 (Cooper) Proprioceptors, tension receptors; Handouts and ppt will be posted **also** Paper2 discussion, **Related to term paper: Reference list and articles (as PDFs) due**

February 12 (Cooper) Go to lab to record and observe neural responses of proprioceptors
TEXT Hughes 10-11

February 14 (Morris) Vision, TEXT Hughes 12

February 19 (Morris) Vision, TEXT Hughes 12

February 21 (Morris) Vision, TEXT Hughes 12

February 26 (Cooper) Magnetoreception TEXT Hughes 10-11

February 28 (Cooper) Magnetoreception; Vision; Paper2 discussion,
Related to term paper: Reference list and articles (as PDFs) due

March 5 (Cooper) Electroreception & communication; TEXT Hughes 12,13,14,16

March 7 (Cooper) Electroreception & communication; **Outline of research a <500 word article for the public, i.e. newspaper or magazine due**

March 12 (11-16) - Monday through Saturday - Spring Vacation - Academic Holidays

March 14 (11-16) - Monday through Saturday - Spring Vacation - Academic Holidays

March 19 (Cooper) Central integration of visual system.

March 21 (Cooper) Vision: crayfish caudal photo receptor in crayfish.

March 26 (Cooper) Olfaction & pheromones, TEXT Hughes 17-19

March 28 (Cooper) Olfaction & pheromones, **Quiz 2**,

April 2 (Cooper) Paper 3 discussion; **Draft paper due**

April 4 (Cooper) Temperature. handouts

April 9 (Cooper) Temperature. handouts

April 11 (Cooper) Topical ...class input.

April 16 (Cooper) Topical ...class input.

April 18 (Cooper) Cricket communication; student presentations 1,2

April 23 (Cooper) student presentations 3, 4 **Quiz 3**

April 25 (Cooper) student presentations 5,6,;

April 30 No class **Final papers due (Finals week)** (Cooper

Student Learning Outcomes

By the end of this course, you should be able to:

1. Demonstrate a conceptual understanding of the different sensory abilities possessed by animals and the limitations that are shaped by their evolutionary history as assessed by examination.
2. Describe how physical stimuli travel and how they are transduced by sensory cells into chemical responses in animals.
3. Describe how sensory stimuli are simplified and analyzed by sensory systems
4. Demonstrate a knowledge of the mechanisms underlying sensory processing events.
5. Solve problems and critically analyze research papers in the field of neuroscience.
6. Discuss and develop new ideas and suggest future research directions in the field of neuroscience.

Course Requirements: The course will be a mix of lecture and student-led discussion. Readings will be taken from the text and from the primary research literature. The main output of the course will be a term paper on your chosen subject in animal senses. I will

provide greater detail on the term paper, but basically you will read recent primary research papers on one subject and will explain their meaning and how they relate to each other. I will help you to decide on a term paper topic. Your topic proposal is due in Week 4, and the titles of all of your research papers are due in Week 5 (see schedule).

Grading Scale and Scheme

Topic- 5 pts

References- 20 pts

Summaries (Abstract 25points, article of <500 words layman article 25 points) - 50 pts

Outline- 50 pts

First draft- 20 pts

Final draft- 100 pts

Quizzes- 25 pts each = 75 pts

Oral Presentation – 25 pts

Class participation (questions in class, paper discussions, online discussions)- 15 pts

Unexcused late assignments will lose 10% of total points possible for every day late. Lateness will be calculated based on the time and date listed on Blackboard, and your assignment will be counted when it is submitted on BB/Turnitin or by email, depending on which method is requested by the instructor.

Missed assignments due to an excused absence must be made up within one week after the student's return to campus.

Undergraduate students will be provided with a Midterm Evaluation (by the midterm date) of course performance based on criteria in syllabus

Final grades will be based on total points earned and will be assigned as follows:

Undergraduates:

A = 90 - 100 %

B = 80 – 89.99 %

C = 70 – 79.99 %

D = 60 – 69.99 %

E = less than 60 %

Writing assignments for course:

Abstract: Write an abstract on a topic of interest related to current literature on the topic of animal senses.

Short newspaper type report: Write a <500 word article on animal senses for the public, i.e. newspaper or magazine

Review article/term paper: There will be one formal manuscript write-up due this semester. The manuscript is intended to mimic the manuscript writing and submission processes required for scientific publication, and it will utilize results from reviewing scientific literature. The manuscript must be written independently (no group submissions). The draft and final submission dates are listed above in class schedule. The writing format described by the Journal of Comparative Biochemistry and Physiology - Part A: Molecular & Integrative Physiology will be used or Annual Reviews in Physiology. As an example, go to the journal's web page and look up information for authors at:

http://www.elsevier.com/wps/find/journaldescription.cws_home/525464/description

The "guide to authors" provided by the journal provides the formatting guidelines that must be followed for this assignment. Additional information for this assignment will be made available through the course website.

Office hours and study habits: Please come visit during my office hours. Feel free to stop by to chat, or to clarify something from class or the reading materials. Please realize that we are here to help you, not to trip you up with tough assignments. We all have the same goal—for students to learn and master the course material. But it can be hard for me to help, unless I know you need help. To find out if you need help, please ask questions in class, by email, or Blackboard. Form study groups and study together regularly. If you make these efforts, you will greatly benefit. It is important in your future professions to become 'active learners'. This means that you take responsibility for your own learning and actively seek out the knowledge you require. Please do not accept "not understanding"! If you don't understand, don't think that you are the only one who did not get it, and be embarrassed to ask a question. It is my pleasure (and my paid responsibility) to HELP you understand. Class time is most productive and enjoyable when it is a two-way communication between teachers and students.

Quizzes: The quizzes will allow you to demonstrate your understanding of the material presented in class and in the textbook. Each quiz will last ~30 min and will involve short answers of a few sentences or a diagram. Make-up quizzes are given for excused DOCUMENTED absences. Documentation must be turned in no later than one week after the absence from class. Unexcused absences from quizzes will result in a score of zero for that quiz. All make-up quizzes must be completed within two week of the scheduled quiz date. _

What constitutes an excused absence?

Excused Absences: S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences:

- a. serious illness;
- b. illness or death of family member;

- c. University-related trips;
- d. major religious holidays;
- e. other circumstances found to be "reasonable cause for nonattendance".

In order for an absence to be excused, students **MUST** provide **WRITTEN** documentation detailing one of the above circumstances within one week of the absence.

A grade of incomplete (I) can only be given if a *major* portion of the course has been completed at a *passable* level. An I grade will not be given for poor performance or for lack of attendance. Documentation is required to justify a grade of I. See the University catalog or schedule of classes for information on withdrawal from the course.

Blackboard/Class Communications

Course announcements, assignments, lecture outlines and additional materials will be posted online using Blackboard. Exams and homework dates will remain fixed. Updates to this syllabus (regarding topics and reading) will be posted; please check periodically. You will also receive important course announcements via your UK e-mail account. If you do not use your UK e-mail account, you need to activate it. It is strongly recommended that you check your e-mail regularly. I may send messages—sometimes with attachments—to the class using this medium. You should also feel free to e-mail me if you have any questions or problems. Feel free to call me as well, if you prefer a more personal communication. I am also available during the office hours. If you would like to meet with me at another time, please don't hesitate to e-mail or to call, and I can schedule a time to meet.

Honesty and Civility

You must abide by UK's Code of Conduct

(<http://www.uky.edu/StudentAffairs/Code/index.html>), which prohibits:

1. Academic dishonesty and impropriety, including plagiarism and academic cheating.
2. Interfering or attempting to interfere with or disrupting the conduct of classes or any other normal or regular activities of the University.

We take plagiarism and other forms of cheating very seriously. If you have any questions as to whether something is plagiarism, please ask me, or, if that's not possible, assume that it is and don't do it! **Plagiarism** is the copying or paraphrasing the work of others and turning it in as your own work and is strictly prohibited. This includes the writing from other students (past or present) and any published reference (print or electronic) Copying text from the web or other sources and then rearranging the words is still plagiarism. Keep in mind I will be using plagiarism detection software. Any plagiarized assignment will not be accepted, and you will receive a score of 0 for that assignment. Plagiarism is a serious academic offense and may result in an "F" in the course and possibly expulsion from the university. The only way to avoid plagiarism is to write in your own words (which is also the best way to learn and become a better writer).

Disabilities

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257□2754, email address jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.