Term Information

Effective Term	Spring 2018

General Information

Course Bulletin Listing/Subject Area	Evol, Ecology & Organismal Bio
Fiscal Unit/Academic Org	Evolution, Ecology & Org Bio - D0390
College/Academic Group	Arts and Sciences
Level/Career	Undergraduate
Course Number/Catalog	2270
Course Title	Parasites and Evolution: How worms, mosquitoes, etc. manage their/our world
Transcript Abbreviation	ParasiteEvolution
Course Description	Introduction to life history of and pathology caused by a number of parasites of invertebrates and vertebrates (including humans). Parasites and disease vectors are used to illustrate broad evolutionary and ecological concepts.
Semester Credit Hours/Units	Fixed: 2

Offering Information

Length Of Course	14 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	No
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites	4 semester credit hours in Biological Sciences
Exclusions	
Electronically Enforced	Yes

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code	26.1303
Subsidy Level	Baccalaureate Course
Intended Rank	Freshman, Sophomore

Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

- Students will recognize the diversity of lineages that have evolved parasitism.
- Students will be able to describe the diversity of morphological adaptations in the main parasite groups.
- Students will be able to describe the diversity of life-history adaptations in the main parasite groups.
- Students will be to explain the various ways parasites find, invade and manipulate their hosts.
- Students will be able to explain host behavioral, physiological and molecular defenses.
- Students will be able to coherently discuss the consequences of host-switching.
- Students will be able to coherently discuss the long-term evolutionary patterns in parasite-host associations.
- Students will describe the role of parasites in shaping human history.
- Students will be able to explain the basic principles of epidemiology in humans and domesticated animals.
- Students will be able to evaluate the negative and positive roles of specific parasites.
- Students will be able to discuss on a coherent, factual basis the possible consequences of climate change in terms of parasite-host associations.

Content Topic List

- What is a parasite?
- Distribution of parasitism across animal diversity.
- Morphological adaptations of parasites.
- Life history modifications of parasites.
- Parasite effects on the host.
- Host defenses.
- Genetic diversity and density-dependent selection.
- Molecular adaptation.
- Community ecology: parasites in healthy communities, parasites shaping communities.
- Long-term evolution: co-speciation, phylogeny.
- Host-switching.
- Evolution of virulence.
- Vectors.
- Epidemiology.
- Biogeography.
- Parasites and humans.
- Parasitic diseases.
- Parasites in a changing world.

Sought Concurrence

Yes

Attachments

- Course_goals_objectives_assessments_parasitology.pdf: Learning objectives

  (Other Supporting Documentation. Owner: Johnson,Norman F)

- CLSE_Concurrence_Form_10-15-15.pdf: CLSE Concurrence

  (Concurrence. Owner: Johnson,Norman F)

- Signed_Entomology_Concurrence_Form_10-15-15[2].pdf: Entomology Concurrence

  (Concurrence. Owner: Johnson,Norman F)

- AnimalScience_ Course concurrece request_ EEOB - Parasites and Evolution.pdf: Animal Science Concurrence

  (Concurrence. Owner: Johnson,Norman F)

- ConcurrenceRequests.pdf: Concurrence requests

  (List of Depts Concurrence Requested From. Owner: Johnson,Norman F)

- ParasitologyProposalCurriculumMap.xlsx: EEOB Curriculum Map

  (Other Supporting Documentation. Owner: Johnson,Norman F)

- ParasitologySyllabusV3a.docx: Revised Syllabus

  (Syllabus. Owner: Johnson,Norman F)

- CoverMemo.pdf: Cover Memo

  (Other Supporting Documentation. Owner: Johnson,Norman F)

Comments

- See 4-3-17 e-mail to N Johnson. *(by Vankeerbergen,Bernadette Chantal on 04/03/2017 12:38 PM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Johnson,Norman F	03/02/2017 03:17 PM	Submitted for Approval
Approved	Johnson,Norman F	03/02/2017 03:17 PM	Unit Approval
Approved	Haddad,Deborah Moore	03/02/2017 04:35 PM	College Approval
Revision Requested	Vankeerbergen,Bernadette Chantal	04/03/2017 12:38 PM	ASCCAO Approval
Submitted	Johnson,Norman F	06/12/2017 11:38 AM	Submitted for Approval
Approved	Johnson,Norman F	06/12/2017 11:39 AM	Unit Approval
Approved	Haddad,Deborah Moore	06/12/2017 04:52 PM	College Approval
Pending Approval	Nolen,Dawn Vankeerbergen,Bernadette Chantal Hanlin,Deborah Kay Jenkins,Mary Ellen Bigler	06/12/2017 04:52 PM	ASCCAO Approval

Contingencies & recommendations for EEOB 2270 proposal
12 June 2017

From: Norm Johnson

The contingencies and recommendations associated with the provisional approval of our proposal for EEOB 2270 are copied below, along with brief comments concerning how we have dealt with them. The course syllabus and curriculum map have been revised and resubmitted to curriculum.osu.edu.

- Contingencies:
    - Provide weight of assignments and more information about the assignments themselves. Also provide information to the panel about when in the semester various assignments are due.
    - Readings should be included in schedule. How many? How often? How long?

The grading scale, details on the nature of the assignments, and additions to the class schedule have been added to the syllabus. The short readings themselves are intended to be timely and topical. They will be drawn from current events and change from one course offering to the next. The frequency and scale of the readings has been added to the syllabus.

- Recommendations:
    - From the information in curriculum.osu.edu and the meeting times information on the syllabus, it appears that this will be a two credit course. Adjust information at the very top of the syllabus that says that this course is variable 2-3.
    - The Office of Student Life Disability Services has moved and the College's preferred statement is now, "Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614-292-3307, slds@osu.edu; slds.osu.edu."
    - The statement on academic misconduct has a typo in the Faculty Rule number (should be 3335-5-487) and includes an incorrect URL to the Code of Student Conduct (should be http://studentlife.osu.edu/csc/).
    - Course number in curriculum map is incorrect.

I believe that I have corrected all of these unfortunate errors.

EEOB 2270
PARASITES AND EVOLUTION:
HOW WORMS, MOSQUITOES, ETC. MANAGE THEIR/OUR WORLD
2 CREDIT HOURS

MEETING TIMES
Full semester 2 lectures / week, 55 minutes each

COURSE OBJECTIVES
Discuss a variety of parasites in the animal world, with the goal of increasing understanding of parasites and their role in natural communities as well as in human societies. Second, use parasite biology as a means to explain a variety of evolutionary principles and phenomena. The overall focus of the course is decidedly evolutionary.

INSTRUCTOR
Dr. Hans Klompen
Department of EEOB, 1380 Museum of Biological Diversity
Contact information: e-mail: klompen.1@osu.edu

GRADING
Quizzes. There will be 11 short quizzes that will be based on 1) assigned reading; 2) topic/questions of current session; 3) topic/questions of recent sessions. All quizzes will be made up of short-answer questions. The quiz with the lowest score will be dropped from the final grade calculation.
Message board. Students will be required to propose follow-up questions to material discussed in sessions or provide a possible answer to newly posed questions at least once a week. Questions and answers provided may be used in upcoming sessions. The grade for this component will be based on participation (question asked, comments made) and quality.
Writing assignment. A 2–3 page paper dealing with a choice from a limited set of questions. Each student will choose the parasite that will be the focus of the paper. Topics must be approved in advance. This assignment has two parts: an initial outline (5 points of total grade) and the final version (25 points). Students may optionally submit an advanced draft in Week 9 for comments or suggestions. If this option is taken, then the 25 points for the final version will be subdivided into 5 points for the draft and 20 points for the final paper submitted.

Quizzes (11 total, best 10 count)	40 points
Message board participation	30 points
Writing assignment	30 points
Total	100 points

COURSE MATERIALS:
Text (recommended, not required): Carl Zimmer, Parasite Rex, 198pp. New York, The Free Press (~ $25)

READING

Most individual sessions (see schedule) will include readings from current popular science magazines, newspaper science sections, blogs, etc. posted ahead of time. Most readings will be short (1–5 pages), aimed at either presenting data or a viewpoint that will be the focus of discussion. Questions and comments about the readings will make up a significant part of the message board postings.

SCHEDULE

focus on topic, for course session titles will be more attractive

Session	Topic	Reading
1	Organization; what is a parasite?	
2	Distribution of parasitism across animal diversity	yes
3	Animal diversity and parasitism 2: origin parasitism; Quiz 1	
4	Morphological adaptations, worms	yes
5	Morphological adaptations, arthropods; Quiz 2	yes
6	Life history modifications, worms *Select topic for writing assignment	yes
7	Life history modifications, arthropods; Quiz 3	yes
8	Parasite effects on the host 1, physiological modifications	
9	Parasite effects on the host 2, behavioral modifications; Quiz 4	yes
10	Host defenses	yes
11	The role of genetic diversity; density dependent selection *Submit rough outline of writing assignment	yes
12	Molecular adaptation; Quiz 5	yes
13	Parasites in healthy communities	
14	Community ecology: parasites shaping communities; Quiz 6	yes
15	Long-term evolution: co-speciation, phylogeny, tree thinking	yes
16	Long-term evolution: deviations from co-speciation; host switching, extinction, and independent speciation	yes
17	Host switching, local level; Quiz 7	
18	Evolution of virulence	yes
19	Vectors, adding in a 3rd factor; Quiz 8	yes
20	Exercise epidemiology	
21	Biogeography, founder populations	yes
22	Biogeography, founder populations; Quiz 9	yes
23	Parasites and humans: a brief history	
24	Established parasitic diseases; Quiz 10	
25	Emerging parasitic diseases	yes
26	Emerging vector borne diseases; Quiz 11 *Turn in final version of writing assignment	yes
27	So can we live without parasites? The positive side of parasites	yes
28	Parasites in a changing world; effects of global warming	yes

DISABILITIES STATEMENT:
Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614-292-3307, slds@osu.edu; slds.osu.edu.

STUDENT CONDUCT:
It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations or classroom. Instructors shall report all instances of alleged academic misconduct to the Committee on Academic Misconduct (Faculty Rule 3335-5-487). For additional information, see the University's Code of Student Conduct (http://studentlife.osu.edu/csc/).

STATEMENT OF DIVERSITY:
The instructor of this course is committed to promoting a welcoming climate for all students. For more information on diversity see the OSU website (http://www.osu.edu/diversity/). The instructors welcome suggestions, questions, and comments. Any exchange of ideas will be conducted with confidentiality, safety, and respect as guiding principles.

Learning or Course Goal	**Learing Outcome or Objective (content/topic + behavior)**	**Formative Assessment (In class activity or homework)**	**Summative Assessment (exam question)**	**Program Goals (# & level)**
What will students <u>learn?</u>	**If they have learned it, what will students <u>know and be able to do?</u>**	**What will students <u>do to learn it</u>?**	**How will students <u>demonstrate they know it or are able to do it?</u>**	
To know the diversity of parasites	To recognize the diversity of lineages that have evolved parasitism	Read pre-lecture readings, attend lecture, participate in discussions	Through quizzes, participation on message board, and writing assignment	3
	Describe the diversity of morphological adaptations in the main parasite groups			1
	Describe the diversity of life-history adaptations in the main parasite groups			1
To describe and understand the basic interactions between parasites and their hosts	Explain the various ways parasites find, invade and manipulate their hosts	Read pre-lecture readings, attend lecture, participate in discussions	Through quizzes, participation on message board, and writing assignment	2, 3
	Explain host defences at various scales (behavioral, physiological, molecular)			2, 3
	Discuss in a coherent way the consequences of host switching			(4)
	Discuss long term evolutionary patterns in parasite host associations (phylogeny, biogeography)			(4)
To appropriately link processes and patterns discussed in general associations to parasite human interactions	Understand the role of parasites in shaping human history	Read pre-lecture readings, attend lecture, participate in discussions	Through quizzes, participation on message board, and writing assignment	(6), 7
	Explain the basic principles of epidemiology in humans and domesticated animals	In-class exercise manipulation factors		5, 7
	Provide well corrobotated evaluation of negative and positive roles of specific parasites			
	Discuss on a coherent, factual basis possible consequences of climate change in terms of parasite host associations			4, 7

Concurrence for EEOB 2270 – Parasites and Evolution – requested from

Entomology 22 Feb 2017

Animal Science 22 Feb 2017

Center for Life Sciences Education 22 Feb 2017