



SENATE COMMITTEE ON CURRICULAR AFFAIRS
COURSE SUBMISSION AND CONSULTATION FORM

Principal Faculty Member(s) Proposing Course

Name	User ID	College	Department
DAVID ANDREW PUTS	dap27	Liberal Arts (LA)	Not Available

Academic Home: Liberal Arts (LA)

Type of Proposal: Add Change Drop

Current Bulletin Listing

Abbreviation: **ANTH**

Number: **216**

I am requesting recertification of this course for the new Gen Ed and/or University Requirements Guidelines

Course Designation

(ANTH 216N) Sex and Evolution

Course Information

Cross-Listed Courses:

Prerequisites:

Corequisites:

Concurrents:

Recommended Preparations:

Abbreviated Title: Sex and Evolution

Discipline: General Education

Course Listing: Inter-Domain

Special categories for Undergraduate (001-499) courses

Foundations

Writing/Speaking (GWS)

Quantification (GQ)

Knowledge Domains

Health & Wellness (GHW)

Natural Sciences (GN)

Arts (GA)

Humanities (GH)

Social and Behavioral Sciences (GS)

Additional Designations

Bachelor of Arts

International Cultures (IL)

United States Cultures (US)

Honors Course

Common course number - x94, x95, x96, x97, x99

Writing Across the Curriculum

First-Year Engagement Program

First-Year Seminar

Miscellaneous

Common Course

GE Learning Objectives

GenEd Learning Objective: Effective Communication

GenEd Learning Objective: Creative Thinking

GenEd Learning Objective: Crit & Analytical Think

GenEd Learning Objective: Global Learning

GenEd Learning Objective: Integrative Thinking

GenEd Learning Objective: Key Literacies

GenEd Learning Objective: Soc Resp & Ethic Reason

Bulletin Listing

Minimum Credits: 3

Maximum Credits: 3

Repeatable: NO

Department with Curricular Responsibility: Anthropology (UPLA_ANTH)

Effective Semester: After approval, the Faculty Senate will notify proposers of the effective date for this course change. Please be aware that the course change may not be effective until between 12 to 18 months following approval.

Travel Component: NO

Course Outline

A brief outline or overview of the course content:

This course introduces students to evolutionary theory and explores its relevance to the anthropological study of human sexuality. After honing their evolutionary skills by investigating non-human reproduction, students will apply evolutionary principles to understanding human sexuality. Why do we prefer certain characteristics in a mate? How do these preferences differ between and within the sexes, and why? How do mating behaviors vary across cultures, and why are some more culturally variable than others? Other topics covered include sexual conflict and rape, and parental care and abuse. In exploring the evolutionary basis for a trait, it is helpful to understand its development. Thus, this course also covers the basics of sexual differentiation and investigates how variation in developmental processes might lead to variation in sexual orientation and gender identity. Students should take away not only a better understanding of human sexuality but also a way of thinking that helps them understand all living things.

A listing of the major topics to be covered with an approximate length of time allotted for their discussion:

Science and Explanation. Characteristics of a scientific explanation; levels of biological explanation; how to test ultimate explanations; naturalistic fallacy; nature "vs." nurture; tabula rasa concept; heritability. (1 week)

Evolution and its Genetic Basis. What is evolution? Causes of evolution; basic molecular and quantitative genetics; logic of natural selection; factors governing the rate of evolution by natural selection; clarifying points regarding natural selection. (1 week)

Adaptation. Constraints on adaptation; facultative adaptations (when do they evolve? Can they be heritable? Reaction norms, mental modularity); susceptibilities. (1/2 week)

Levels of Selection. Gene-, individual-, group-level selection; problems with group selection; kin selection, inclusive fitness, Hamilton's rule. (1/2 week)

Why Does Sexual Reproduction Exist? Recombination; meiosis; types of asexual reproduction; costs and possible benefits of sexual reproduction (population adaptability; Muller's ratchet; Williams's Lottery Principle and r strategists; Hamilton's Red Queen hypothesis, co-evolutionary arms races and K strategists). (1 week)

Males and Females. Definition of males and females; hypotheses about why sexes evolved; sex ratio theory and frequency-dependent selection; hermaphroditism and hypotheses about why each type of hermaphroditism evolved; gonochorism. (1/2 week)

Sexual Selection. Mechanisms of sexual selection and characters favored in the competing sex; why only one sex (usually males) often has sexually selected traits; sex role reversed species; mating systems and how they relate to the operational sex ratio; Bateman's principle; Coolidge effect; costs and benefits of choosiness about mates; polygyny threshold model; Fisher's runaway sexual selection; Hamilton-Zuk hypothesis; lek paradox. (1 week)

Sexual Selection in Humans. Operational sex ratio in humans; predictions about humans from sexual selection theory and evidence regarding these predictions; quantifying sex differences: effect size and Cohen's d; Clark and Hatfield study of sex differences in choosiness. (1/2 week)

Ontogeny of Sex Differences. Genetic and hormonal bases of sexual differentiation; sexual behavior and spatial ability in rats; sex hormones and human psychological sex differences; complete androgen insensitivity syndrome ; congenital adrenal hyperplasia; 5-alpha-reductase deficiency; sex reassignment at birth. (1 week)

Gender. Gender identity; childhood gender nonconformity (CGN)/childhood gender identity disorder (GID); relation between CGN and sexual orientation; adult GID/transsexualism: homosexual transsexualism vs. autogynephilia; gender nonconformity across cultures. (1/2 week)

Human Mating Systems and Mate Choice. Mate choice based on good genes; mate choice based on investment; mixed reproductive strategies; sex differences in emotional and sexual jealousy. (2 weeks)

Women's Mating Strategies. Direct and indirect competition among women; dowry as a possible competitive tactic to secure male investment. (1 week)

Sexual Selection in Men. Predicting the mechanism of sexual selection across species; evidence that intrasexual selection has predominated in men (with some sperm competition), and intersexual selection has predominated in women. (1/2 week)

Sexual Conflict and Rape. Conflicts between male and female reproductive strategies; standard social science explanation for rape; evolutionary explanation for rape and sexual coercion; putative female counteradaptations to rape. (1 week)

Sexual Orientation. Kinsey dimensions of sexuality; sexual arousal and orientation; genetics of sexual orientation; sex hormones and the brain; fraternal birth order effect on male sexual orientation; evolution of within-sex variation in sexual orientation. (1 week)

Marriage. Defining marriage; distribution of marriage types across cultures; sex differences in function of marriage/eagerness to marry across cultures; familial influence on marriage; marital transactions and reasons for divorce as evidence for functions of marriage. (1 week)

Parental Care and Abuse. Reproductive alternatives to parental investment; infanticide; variation in payoffs from parental investment; genetic relatedness and step-parenting; paternity certainty and paternal investment. (1 week)

Course Description:

This course introduces students to evolutionary theory and explores its relevance to the anthropological study of human sexuality and sex differences. In doing so, the course draws from and integrates findings from a wide array of disciplines, including evolutionary biology, genetics, neuroscience, endocrinology, behavioral ecology, anthropology, and psychology. After honing their evolutionary skills by investigating reproduction in other species, students will apply evolutionary principles to understanding human mating. Why do we prefer certain characteristics in a mate? How do these preferences differ between and within the sexes, and why? How do mating behaviors vary across cultures, and why are some behaviors more culturally variable than others? Other topics covered include infidelity, sexual jealousy, concealed ovulation, sexual conflict and rape, orgasm, parental care and abuse, and menopause. In understanding the evolutionary basis for a trait, it is helpful to understand its development. Thus, this course also covers the basics of sexual differentiation and investigates how variation in these processes might lead to variation in sexual orientation and gender identity. Students should take away not only a better understanding of human sexuality but also a way of thinking that helps them understand all living things.

The name(s) of the faculty member(s) responsible for the development of the course:

Name: DAVID ANDREW PUTS (dap27)

Title:

Phone:

Address:

Campus: UP

City:

Fax:

Course Justification

Instructional, Educational, and Course Objectives:

This section should define what the student is expected to learn and what skills the student will develop.

By the end of the course, students should be able to:

- 1) Combine Darwinian natural selection with basic genetics to generate an evolutionary model of organisms as gene replicators.
- 2) Apply evolutionary theory to render ultimate explanations of various modes and patterns of reproduction.
- 3) Explain why, ultimately and ontogenetically, males and females are often so different, and predict how and to what extent the sexes will differ in a given species.
- 4) Evaluate how various human behaviors, including mate choices, sexual and emotional jealousy, sexual violence, marriage, and parental behaviors, fit the predictions of the evolutionary models of sexual competition and mate choice developed in the course.

Evaluation Methods:

Include a statement that explains how the achievement of the educational objective identified above will be assessed.

The procedures for determining students' grades should be specifically identified.

The achievement of educational objectives will be assessed through 10 weekly problem sets, and three examinations. The 10 problem sets and the three examinations each contribute 25% of the total grade (100 points each for a total of 400 points). Problem sets consist of several short essay questions on assigned readings and are submitted in person at the beginning of class. Thoughtful, complete answers that demonstrate a student has done the reading are given full credit. Problem sets are designed to give students practice with the analytical methods of modern biology, anthropology, and psychology and familiarize them with the

diversity of evolved sexual patterns. Exams consist of multiple choice questions and are taken in class. Exams target understanding of core concepts and a mastery of the logic of the course rather than rote memorization.

Relationship/Linkage of Course to Other Courses:

This statement should relate the course to existing or proposed new courses. It should provide a rationale for the level of instruction, for any prerequisites that may be specified, or for the course's role as a prerequisite for other courses.

This course complements PSYCH 422 Human Sexuality, which takes a more descriptive approach to human sexuality. Sex and Evolution focuses on why, evolutionarily (and to a lesser extent, developmentally), various patterns of sexual and other reproductive behavior exist. Sex and Evolution is the only course at Penn State to focus on the evolution of human sexual behavior. Because the goal is to introduce as many students as possible to the application of evolutionary thinking to the human experience, this course is taught at an introductory (200) level with no prerequisites.

Relationship of Course to Major, Option, Minor, or General Education:

This statement should explain how the course will contribute to the major, option, or minor and indicate how it may function as a service course for other departments.

This course can be used toward the Anthropology major and minor. The course is also an inter-domain course and fulfills Natural Science and Social Science General Education requirements. This course also satisfies credit toward the Sexuality and Gender Studies minor.

A description of any special facilities:

Frequency of Offering and Enrollment:

This course will be offered once per year, beginning with an enrollment of 180 and possibly increasing this number as a function of demand.

Justification for Changing The Proposal:

Include a justification for each change to the course. Particular attention should be paid to the effects of the course change within the discipline and in other disciplines where the course may be required within a major or used as a service course. When a unit submits several course changes, with or without new course proposals, a general statement covering the programmatic effects of the changes should be submitted.

The course is being revised to align with the new General Education learning outcomes.

Alignment with General Education Objectives

EFFECTIVE COMMUNICATION – the ability to exchange information and ideas in oral, written, and visual form in ways that allow for informed and persuasive discourse that builds trust and respect among those engaged in that exchange, and helps create environments where creative ideas and problem-solving flourish.

KEY LITERACIES – the ability to identify, interpret, create, communicate and compute using materials in a variety of media and contexts. Literacy acquired in multiple areas, such as textual, quantitative, information/technology, health, intercultural, historical, aesthetic, linguistic (world languages), and scientific, enables individuals to achieve their goals, to develop their knowledge and potential, to lead healthy and productive lives, and to participate fully in their community and wider society.

CRITICAL AND ANALYTICAL THINKING – the habit of mind characterized by comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating a conclusion. It is the intellectually disciplined process of conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

INTEGRATIVE THINKING – the ability to synthesize knowledge across multiple domains, modes of inquiry, historical periods, and perspectives, as well as the ability to identify linkages between existing knowledge and new information. Individuals who engage in integrative thinking are able to transfer knowledge within and beyond their current contexts.

CREATIVE THINKING – the capacity to synthesize existing ideas, images, or expertise in original ways and the experience of performing, making, thinking, or acting in an imaginative way that may be characterized by innovation, divergent thinking, and intellectual risk taking.

GLOBAL LEARNING – the intellectually disciplined abilities to analyze similarities and differences among cultures; evaluate natural, physical, social, cultural, historical, and economic legacies and hierarchies; and engage as community members and leaders who will continue to deal with the intricacies of an ever-changing world. Individuals should acquire the ability to analyze power; identify and critique interdependent global, regional, and local cultures and systems; and evaluate the implications for people's lives.

SOCIAL RESPONSIBILITY AND ETHICAL REASONING – the ability to assess one's own values within the social context of problems, recognize ethical issues in a variety of settings, describe how different perspectives might be applied to ethical dilemmas, and consider the ramifications of alternative actions. Individuals should acquire the self-knowledge and leadership skills needed to play a role in creating and maintaining healthy, civil, safe, and thriving communities.

What component(s) of the course will help students achieve the General Education Learning Objectives covered in the course? Provide evidence that students in the course have adequate opportunities to achieve the identified learning objectives.

EFFECTIVE COMMUNICATION

Effective written communication skills are promoted and assessed via 10 weekly problem sets in which students answer several short essay questions related to the analytical methods of modern behavioral biologists and the diversity of evolved sexual patterns.

CRITICAL AND ANALYTICAL THINKING

The first two lectures in Sex and Evolution are devoted to understanding the scientific reasoning process, including inductive and deductive reasoning, and the concept of parsimony. This focus on science as a way of understanding is a theme carried throughout the course. Social scientific methods and theory are revisited frequently, as we explore the observations that led to various hypotheses, the novel predictions made by these hypotheses, alternative hypotheses, the types of data social scientists work with, and how social science studies are designed to gather these data.

INTEGRATIVE THINKING

This course integrates data and theory across diverse disciplines, including evolutionary biology, genetics, neuroscience, endocrinology, behavioral ecology, biological anthropology, and social and evolutionary psychology.

GLOBAL LEARNING

We discuss how mating preferences and behaviors vary across cultures, and why some are more culturally variable than others. We also explore different cultural interpretations and meanings of within-sex variation in sexual orientation and gender identity.

How will students be assessed to determine their attainment of the Learning Objective(s) of General Education covered in this course? This assessment must be included as a portion of the student's overall performance in this course.

EFFECTIVE COMMUNICATION

The weekly written assignments will assess how effectively students can communicate and integrate information in response to the prompts provided by the instructor.

CRITICAL AND ANALYTICAL THINKING

Relevant critical thinking and analytical skills will be promoted and assessed via the 10 weekly problem sets in which students answer several short essay questions. These weekly written assignments require students to critically evaluate and integrate knowledge within the context of the course topics. Students will be assessed based on their ability to think critically and integratively about topics presented in class.

GLOBAL LEARNING

The weekly writing assignments will evaluate the ability of students to thoughtfully and critically consider a range topics of global social and cultural relevance using biological, psychological, and evolutionary anthropological perspectives. Many of the target issues in these assignments are related to issues related to intercultural variation.

General Education Domain Criteria

General Education Designation: Inter-Domain

GN Criteria

- Explain the methods of inquiry in the natural science fields and describe how the contributions of these fields complement inquiry in other areas
- Construct evidence-based explanations of natural phenomena
- Demonstrate informed understandings of scientific claims and their applications
- Evaluate the quality of the data, methods, and inferences used to generate scientific knowledge
- Identify societal or philosophical implications of discoveries in the natural sciences, as well as their potential to address contemporary problems

What components of the course will help students achieve the domain criteria selected above?

-Explain the methods of inquiry in the natural science fields and describe how the contributions of these fields complement inquiry in other areas

Throughout the course, lectures and group discussion are designed to help guide students in understanding the scientific reasoning process. We will focus especially on natural selection theory, the central integrating principle of modern biological science, using it to predict aspects of human and non-human reproduction, such as mating behavior. In the first half of the course, the deductive process is highlighted in discussions of predictions from evolutionary theory regarding non-human reproduction, and tests of these predictions. In the second half of the course, the body of theory developed during the first half, including sexual selection theory, Hamilton's inclusive fitness theory, and Trivers' parental investment theory, will be used to predict and explain aspects of human social behavior across cultures, including mating, reproduction, and parenting.

-Construct evidence-based explanations of natural phenomena

Sex and Evolution explores the data-based evidence for hypotheses covering a broad variety of topics related to human sexuality. These range from the evolution of sexual reproduction itself and the subsequent evolution of separate sexes, to the evolution and development of human psychological and anatomical sex differences, our mate preferences, competition for mates, jealousy, sexual conflict and sexual aggression, sexual orientation, marriage and divorce, and parental care and abuse. Explanations are derived from evolutionary theoretical principles developed at the beginning of the course and then evaluated in relation to empirical evidence across topics throughout the course.

-Demonstrate informed understandings of scientific claims and their applications

The purpose of this course is to teach students about how natural and sexual selection shape living things, and how this is accomplished via relationships between genotypes and phenotypes, and between phenotypes and reproduction. This course covers aspects of many fields within the biological sciences as they relate to human sexuality, including evolutionary biology, developmental biology, endocrinology, physiology, genetics, neuroscience, and anatomy. Aside from surveying our current understanding of the evolution and development of sexuality, this course is designed to instill in students an appreciation for and understanding of the evolutionary and developmental processes that affect the anatomy and behaviors of all living things.

GS Criteria

- Explain the various methods of inquiry used in the social and behavioral sciences and describe how the contributions of these fields complement inquiry in other areas

Identify and explain major foundational theories and bodies of work in a particular area of social and behavioral sciences

Describe the ways in which many different factors may interact to influence behaviors and/or institutions in historical or contemporary settings

Explain how social and behavioral science researchers use concepts, theoretical models and data to better understand and address world problems

Recognize social, cultural, political and/or ethical implications of work in the social and behavioral sciences

What components of the course will help students achieve the domain criteria selected above?

-Explain the various methods of inquiry used in the social and behavioral sciences and describe how the contributions of these fields complement inquiry in other areas

Sex and Evolution explores the methods and hypotheses relevant to a broad variety of topics related to human sexuality. These range from the development of human psychological and behavioral sex differences, our mate preferences, competition for mates, jealousy, sexual conflict and sexual aggression, sexual orientation, marriage and divorce, and parental care and abuse. Methods of inquiry include cross-species comparison; cross-cultural comparison; within-species correlational studies using the methods of behavioral genetics, endocrinology, and neuroscience; and within-species experimentation, including the methods of experimental psychology.

-Identify and explain major foundational theories and bodies of work in a particular area of social and behavioral sciences

The first two lectures in Sex and Evolution are devoted to understanding the scientific reasoning process, including the concept of parsimony. This focus on science as a way of understanding is a theme carried throughout the course. Social scientific methods and theory are revisited frequently, as we explore the observations that led to various hypotheses, the novel predictions made by these hypotheses, the types of data social scientists work with, and how social science studies are designed to gather these data.

-Describe the ways in which many different factors may interact to influence behaviors and/or institutions in historical or contemporary settings

This course explores the multifactorial nature of behavior and psychology. This is accomplished first by introducing students to the concept of heritability and explaining that genetic and environmental differences among individuals both frequently account for large portions of the variance in psychobehavioral traits. Second, the interaction between genes and environment in the development and expression of psychobehavioral traits is explored. Finally, it is stressed throughout that a multitude of environmental variables affect virtually all preferences, choices, emotions and behaviors; and the job of the social scientist is to pare down unexplained variance by attempting to identify those variables with the largest effects.

-Recognize social, cultural, political and/or ethical implications of work in the social and behavioral sciences.

Sex and Evolution is ostensibly a course about human sexuality, but its message is much broader: its purpose is to teach students about how natural and sexual selection shape living things, and how this is accomplished via relationships between genotypes and phenotypes, and between phenotypes and reproduction. Thus, aside from surveying our current understanding of the evolution and development of sexuality, this course is designed to instill in students an appreciation for and understanding of the evolutionary and developmental processes that affect the anatomy and behaviors of all living things. Throughout the course, students encounter numerous socially- and ethically-charged topics, including sexual orientation, gender identity, sexual coercion, and homicide, and are taught to distinguish causal explanations from moral justification.

Integrative Studies

Explain how the intellectual frameworks And methodologies of the two Knowledge Domains will be explicitly addressed in the course and practiced by the students.

This course presents topics related to human sexuality within the context of evolutionary theory informed by social, behavioral, psychological, and anthropological theories and perspectives. The theoretical frameworks, methodologies, and data from the biological and social sciences are intertwined throughout the course of the semester to present an integrated, inter-domain perspective to students. As such, Sex and Evolution explores the evidence for hypotheses covering a broad variety of topics related to human sexuality from both biological and social science perspectives. Topics in approximately the first third of the semester are related to evolutionary theory, adaptation, and biological perspectives on the evolution of sexual reproduction in order to establish the evolutionary framework within which specific human-focused themes can be explored from social and behavioral science perspectives for the rest of the semester. Topics such as the evolution and development of human psychological and anatomical sex differences, gender, mate preference, competition for mates, jealousy, sexual conflict and sexual aggression, sexual orientation, marriage and divorce, and parental care and abuse are all covered from both biological and social science perspectives. For example, topics such as gender, mate choice, and sexual aggression are presented and discussed from biological, psychological, and cultural perspectives, bringing current theory from multiple domains to bear on complex psychobehavioral and biological concepts. In addition, marriage, for instance, is discussed from cross-cultural/anthropological, evolutionary, and psychological perspectives, including examination of cultural differences in marital transactions and reasons for divorce as evidence for the functions of marriage.

Demonstrate that each Of the two domains will receive approximately equal attention, providing evidence from course topics, assignments, or other course components, and that students will integrate material from both domains.

For approximately the first 5 weeks of the semester, the focus will largely be on evolutionary and biological frameworks for understanding the evolution of sexual reproduction, sex differences, and mating behavior. These topics include the nature of scientific knowledge, the forces of evolution, sexual selection, adaptation, and the evolution of sexual reproduction and sex differences. The remainder of the term will be focused on exploring topics from both social science and biological science perspectives with a focus on human sexuality. Topics to be covered include sexual selection, development and perception of sex differences and identity, gender, mate choice, sexual aggression, sexual orientation, marriage, and parental care. The weekly written assignments require students to critically evaluate and integrate data and methodologies across the two domains to address topics covered in the course.

Briefly explain the staffing plan. Given that each Inter-Domain course is approved for two Knowledge Domains, it will be taught by an instructor (or instructional team) with appropriate expertise in both domains.

This course is intended to be taught by faculty with expertise in biological anthropology, biocultural evolution, and evolutionary psychology. The staffing plan is to have a single faculty member with strong foundational knowledge of biological and evolutionary theory, biocultural anthropology, and behavioral and evolutionary psychology, as currently exists in the Anthropology department.

Describe the assessments that will be used to determine students' ability to apply integrative thinking.

Students' ability to apply integrative thinking across the GN and GS domains will be promoted and assessed via the 10 weekly problem sets in which students answer several short essay questions. These weekly written assignments require students to critically evaluate and integrate data and methodologies across the domains in relation to the topics covered in the course. Students will be assessed based on their ability to think critically and integratively about topics presented in class. Problem sets are designed to give students practice with the analytical methods of modern evolutionists and familiarize them with the diversity of evolved sexual patterns. Exams target understanding of core concepts, integration, and a mastery of the logic of the course rather than rote memorization.

Campuses That Have Offered (ANTH 216) Over The Past 4 Years

semester	AB	AL	BK	BR	BW	CR	DS	ER	FE	GA	GV	HB	HN	HY	LV	MA	NK	PC	SH	SL	UP	WB	WC	WS	XC	XP	XS	YK
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UPLOADED DOCUMENTS FOLLOW:

Sample Course Syllabus **ANTH 216 *Sex and Evolution***

Course: ANTH 216
Course Title: Sex and Evolution
Credits: 3

Prerequisites/Co-requisites/Concurrent Requirements/Recommended Preparation: None.

Course Attributes/Designations: This course is an Inter-domain course between the Natural Science (GN) and Social and Behavioral Science (GS) domains that fulfills the requirements for Integrated Studies credits within the General Education Curriculum.

General Education Objectives:

The following three General Education Learning Objectives will be covered in this course:

EFFECTIVE COMMUNICATION – the ability to exchange information and ideas in oral, written, and visual form in ways that allow for informed and persuasive discourse that builds trust and respect among those engaged in that exchange, and helps create environments where creative ideas and problem-solving flourish.

CRITICAL AND ANALYTICAL THINKING – the habit of mind characterized by comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating a conclusion. It is the intellectually disciplined process of conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

GLOBAL LEARNING – the intellectually disciplined abilities to analyze similarities and differences among cultures; evaluate natural, physical, social, cultural, historical, and economic legacies and hierarchies; and engage as community members and leaders who will continue to deal with the intricacies of an ever-changing world. Individuals should acquire the ability to analyze power; identify and critique interdependent global, regional, and local cultures and systems; and evaluate the implications for people's lives.

Course Description:

Sex and Evolution is a science course designed to introduce students to evolutionary theory and explore its relevance to the study of human behavior. We will focus especially on natural selection, the central integrating principle of modern biological science, using it to explain aspects of human sexuality, such as mating behavior.

This course can be exciting for several reasons. First, evolutionary theory offers insight into the origins of the fascinating diversity of organisms around us and explains why each species looks and behaves the way it does. Second, we can apply these same principles to understand why we humans are the way we are. For example, why do we prefer certain characteristics in a mate and not others? How do these preferences differ between the sexes, and why? Lastly, sex itself is interesting to nearly all of us but has many puzzling aspects that evolutionary theory can help to demystify.

Course Learning Objectives:

We will build our understanding progressively by working toward a series of goals. By the end of the course, you should be able to think like a natural scientist to:

- 1) Combine Darwinian natural selection with basic genetics to generate an evolutionary model of organisms as gene replicators.
- 2) Apply evolutionary theory to render ultimate explanations of various modes and patterns of reproduction.
- 3) Explain why males and females are often so different, and predict how and to what extent the sexes will differ in a given species.
- 4) Evaluate how humans fit the predictions of the evolutionary models of sexual competition and mate choice that we have developed.

You and Your Classmates:

This course is open to all Penn State students and has no prerequisites, since we will build our evolutionary models from basic scientific principles and observations. Consequently, your classmates will be diverse in their educational backgrounds. Take advantage of this range of experience by getting to know your classmates with whom you can discuss ideas and form study groups. On the first page are spaces for you to record information on contacting your classmates. Introduce yourself to a couple of your neighbors in class and exchange information. If you know you have to miss class, you can ask one of these people to pick up handouts for you and let you see his or her notes.

Required Reading:

Textbook: Puts, David A. (2009) *The Evolution of Human Sexuality: An Anthropological Perspective*, 2nd ed. Dubuque, Iowa: Kendall/Hunt.

Problem Sets can be found at the end of each unit in the textbook. Problem sets are designed to give you practice with the analytical methods of modern evolutionists and familiarize you with the diversity of evolved sexual patterns. As you complete assigned readings in the text, answer the relevant problem sets. Because we build new knowledge on top of old knowledge in this class, it is imperative that you do not let yourself get behind.

We will be happy to recommend additional reading material on any course-related topic you wish to pursue. Also, each of the articles in the textbook has a bibliography.

Grading:

93 to 100	A
90 to 92.99	A-
87 to 89.99	B+
83 to 86.99	B
80 to 82.99	B-
77 to 79.99	C+
70 to 76.99	C
60 to 69.99	D
Below 60	F

Your grade will be composed of the following:

Exam 1.....	100 points
Exam 2.....	100 points
Exam 3 (Final Exam).....	100 points
10 problem sets (10 points each).....	100 points
TOTAL:	400 points

Exams consist of multiple choice questions and will be taken in class. As in any natural science course, the final is logically cumulative. We don't expect anyone will cheat by concealing notes or looking at others' work. We think you will be interested enough in the material to want to learn it. However, if anyone is caught cheating during an exam, the exam will be confiscated and a zero grade will be recorded. Your final exam schedule can be found here by approximately the 5th week of the semester:

http://www.registrar.psu.edu/exams/exam_schedule/fe_search_schedule.cfm

Curve Policy: For exams, if the class mean is below 75%, the difference between the class mean and 75% will be added to everyone's score.

Problem Sets must be **typewritten** and submitted **in person** at your weekly section. A problem set is due each week unless announced otherwise (see the schedule at the end of this syllabus). Thoughtful, complete answers that demonstrate you have done the reading will be given full credit. Problem sets are designed to give you practice with the analytical methods of modern evolutionists and familiarize you with the diversity of evolved sexual patterns. Because we build new knowledge on top of old knowledge in this class, it is imperative that you do not let yourself get behind.

Late Work, Make-Ups, and Other Policies:

Problem Sets: We understand that there may be circumstances causing you to miss a class. Consequently, your **lowest** problem set score will be dropped. "Late" means 5 minutes after the start of the section in which it is due.

Problem sets may NOT be emailed in advance but must be presented in person, in section for full credit. Late problem sets will be worth a maximum of 8 points. Late problem sets will be accepted up to one week after their original due date. Problem sets submitted over a week late will be given a score of zero.

Tests and Exams: Exam dates are inflexible. Please plan ahead. Make-up exams and tests are **all essay**, and allowed only for regularly scheduled, University- approved curricular and extracurricular activities, or under "legitimate, unavoidable" circumstances, as defined by the University Faculty Senate Policy, Section 42-27:

(<http://senate.psu.edu/policies/42-00.html#42-27>).

Schedule of Topics

WEEK	TOPIC	READINGS CHAPTERS	PROBLEM SETS
1	Science and explanation Nature and nurture	Preface, 1 1, 2	Introduction
2	Evolution and its genetic basis	3	1

	Evolution and its genetic basis	3	
3	Selection builds adaptations	3	2
	Levels of selection	4	
4	Why sex exists	5	3
	Males and females	5	
5	Evolution of sex differences	6	4
	Dynamics of sexual selection	6	
6	Sexual selection in humans	7	5
	Ontogeny of sex differences	8	
7	EXAM 1: Ch 1-6; PS 1-5	9, 10	6
	Multiple genders		
8	Sexual orientation	18	10
	Sexual orientation	18, 19, 20	
9	Inbreeding and outbreeding	11	7
	Human mating systems	12	
10	Human mate choice	12	Film
	EXAM 2: Ch 7-12,18-20; PS,7,10		
11	Sexual jealousy	13	8
	Women's mating strategies	14	
12	Sexual selection in men	7, 12, 13	Film
	Sexual conflict	15, 17	
13	Sexual coercion	15, 16	9
	Female orgasm	TBA	
14	Marriage	21	11
	Marriage	21	
15	Parenting	22, 23	Final review
	Parental favoritism	24	