

Science of the Unexplained
Spring 2013
Cat. # ISC1075 Section 379693
Math/Science Department
Florida State College at Jacksonville

Instructors:
Rob Martin and Maria Oehler

COURSE DESCRIPTION

An interdisciplinary study of selected topics in the biological and physical sciences and their impact upon man and society, with the course format including seminar, discussion and projects. Topics will vary.... genetics, tissue culture, space, Malthusian theory, light, sound, and mechanics.

This course will provides students with a unique opportunity to examine many common pseudoscientific fallacies, learn how the human brain has evolved to encourage paranormal beliefs, and challenge the students to confront their own biases as they apply the scientific method to their own beliefs through in-class activities, experiments, and research projects.

PREREQUISITES:

None.

COURSE STRUCTURE: This course meets once a week for three hours. This course required students to actively participate in class discussion, offer opinions about scientific and non-scientific phenomenon. Students are expected to take part in classroom activities, experiments and demonstrations. Students will demonstrate an understanding of what they have learned at the end of the semester by presenting results of their own research, scientific literature analysis, or a creative project, and a final written exam.

COURSE TEXT: No required text. However you should be able to navigate the blackboard shell that correlates with this course as the instructors may post supplemental material for the course to blackboard. You should also regularly check the blackboard site for announcements and materials to prepare yourself for the weekly class sessions.

POLICIES ON ATTENDANCE

Attendance at all session is mandatory. Your grade in the class is dependent not only on the work you turn in but your participation in class.

You may not make up weekly activities if you are not present. **No exceptions**, you will be issued an FN grade if you miss more than 3 class periods

GRADING:

Course Grade based on:

Weekly activities (14 activities at 50 pts each)	= 700 pts
Presentation	= 200 pts
Final written exam	= <u>100 pts</u>
Total points	1000 pts

Grading Scale

90 - 100%	A
80 – 89.9%	B
70 – 79.9%	C
60 – 69.9%	D
below 60%	F

OTHER IMPORTANT THINGS:

1. Instructors reserve the right to make any changes in the rules and the schedule.
2. **No cell phones**, beepers or guests (including children) are allowed in the classroom or lab except by permission. If your phone rings during an exam, quiz, or practical you will be asked to turn in your exam at that time.
3. **No computers or texting allowed during lecture. If you need a calculator you can get out your cell phone at that time but texting will not be tolerated during class. People texting in class will be asked to leave. There may be times that you will need to research. Instructors will tell you when use of electronic devices is appropriate.**
4. Please come to class on time. Lateness will result in the loss of points.
5. Please come to lecture to stay and learn. This is not a hybrid class. If you have a sick child or may have an emergency that requires you to leave part way through a lecture just let one of us know. Otherwise you are expected to stay for the entire class period. Leaving and coming back is distracting for us and your peers.

Important Dates:

Last date to drop this class for a full refund is January 14th.

DROP DATE: The last date to drop this course is March 19th.

PLAGIARISM POLICY:

Academic dishonesty, in any form, is expressly prohibited by the rules of the District Board of Trustees of Florida Community College at Jacksonville.

As used herein, academic dishonesty incorporates the following:

1. Cheating, which is defined as the giving or taking of any information or material with the intent of wrongfully aiding one's self or another in academic work considered in the determination of course grade or the outcome of a standardized assessment.
2. Plagiarism, which is defined as the act of stealing or passing off as one's own work the words, ideas or conclusions of another as if the work submitted were the product of one's own thinking rather than an idea or product derived from another source.

Any other form of inappropriate behavior which may include but is not limited to: falsifying records or data, lying, unauthorized copying, tampering, abusing or otherwise unethically using computer or other stored information, and any other act or misconduct which may reasonably be deemed to be a part of this heading.

Any student alleged to have committed any act of academic dishonesty as defined herein shall be entitled to due process as defined in District Board of Trustees' Rule 6Hx7-2.18 prior to the administration of disciplinary action including suspension and dismissal.

LEARNING ENVIRONMENT EXPECTATIONS

Students are expected to arrive to class on time, prepared to participate. Discussion and questions related to the topic are encouraged; however, talking among students on unrelated topics or while the instructor or other students are speaking will not be tolerated. Entering and leaving the classroom during session will be discouraged. Please turn phones off during lecture.

During exams, no hats/caps or headphones may be worn; please bring pencils and tissues – if you leave the classroom during an exam, you may not return during the exam. All cell phones must be turned off, if your phone rings during an exam you will be asked to turn in the exam at that time.

STUDENTS WITH DISABILITIES:

Students with learning or other types of disabilities should contact R Nicole Dyer, 646-2191, at the beginning of the semester. She will then advise me how best to assist you.

I cannot automatically send an exam to the test center just because a student feels he/she will do better there

COURSE OBJECTIVES: The student will be able to

- Explain and apply major concepts in natural sciences including scientific process, matter, thermodynamics, energy, cycles, evolution, ecology, scientific ethics and the relationship of science and society.
- Demonstrate knowledge of scientific method.
- Communicate scientific ideas through oral or written assignments.
- Interpret scientific models such as formulas, graphs, tables and schematics, draw inferences from them and recognize their limitations.
- Demonstrate problem solving methods in situations that are encountered outside of the classroom.
- Understand scientific principles as applied to daily options and opportunities.

STUDENT WITHDRAWAL:

To withdraw from a course you must do so by the midterm deadline. If you do not withdraw on or before this date, you will receive a grade for the class. If you simply quit coming to class and do not withdraw by the midterm deadline, then you will receive a grade of “FN” (failure for non-attendance). To withdraw from a course you will need to either obtain a withdrawal form from the campus enrollment services office or go online on Artemis. You will need to complete the form and submit it on or before the midterm deadline.

If you quit coming to class and do not withdraw by the midterm deadline, then you will receive the “FN” grade. This can be submitted immediately after the midterm deadline. If you are failing and quit coming to class during the last couple of weeks during the semester, then you will receive a grade of “F” at the end of the semester.

Incomplete “I” grades

An incomplete (“I”) grade may be assigned at the instructor’s discretion upon request by the student to permit the student time to complete required coursework which he/she was prevented from completing in a timely way due to non-academic reasons. The instructor may require the student to document the request to assist in the decision. The instructor may choose not to grant the request. The “I” grade should be considered only when the student has the potential to earn a passing grade if the missing work is made up.

The instructor shall prescribe in a written agreement with the student the remaining coursework required for completion and removal of the “I” grade. A copy of this agreement will be kept on file in the office of the appropriate dean. All work must be completed within the first eight weeks of the subsequent term, unless the instructor agrees to a longer time frame (not to exceed one year). When the work is completed, the instructor will submit a grade change form with the grade earned. If the work is not completed within the prescribed time frame, the “I” will automatically change to an “F” grade. The student will be informed of the final grade assigned.

To be eligible for an “I” grade, the student **must be passing** the course at the time of the request, and must have completed at least 75% of the course work. Because of the nature of this course, it is highly unlikely that an “I” grade will be considered even under these circumstances.

Grade Forgiveness and Course Repeats

Students may repeat a course in an attempt to improve a grade previously earned. State Board Rule 6A-14.0301 limits such attempts to courses where a “D”, “F” or “FN” grade was earned, and

limits to two the number of times a course grade may be forgiven. The official grade and the grade used for calculating the GPA shall be the last grade earned in the course. **In other words, a student may not repeat a course for which they have received a “C” or better.**

A student may have only three total attempts in any course, including the original grade, repeat grades and withdrawals. Upon the third attempt in a course, the student must be given an “A”, “B”, “C”, “D”, or “F”. A fourth attempt may be allowed only through a general appeals process based on extenuating circumstances. ON the 3rd attempt, out-of-state tuition is charged which is about four times the in-state tuition.

Information regarding multiple attempts at a course:

Beginning fall semester, 1997, according to guidelines established by Florida House Bill (HB) 1545, all students may enroll in a specific college credit course only twice at the regular tuition rate. If the first two attempts are unsuccessful (all grades will count as an attempt including audit, IW, AW, W, and NP), the third time a student enrolls in a course he/she must pay the full cost of instruction. This cost is equivalent to the out-of-state tuition rate, approximately four times the cost of regular tuition. Only "drops" submitted by the advertised deadline date (during the first week of a term) will not count as being enrolled.

Institutional Effectiveness

Student work in this class may be collected by the College for the purpose of assessing institutional effectiveness and measuring general education competencies. The artifacts collected and submitted for this purpose will be done so anonymously.

Tentative Schedule

Week	Week of	Topic
1	1/9	Class expectations, Introduction to Cryptozoology and Psychic Phenomena Activity: Student choice: Experimental design Logical fallacies Activity: Design an experiment
2	1/16	Successful Stories a. Apes-mountain gorillas, orangutan, black ape b. Okapi, Vietnamese deer c. Underwater/Deep Scattering Layers d. Oarfish e. Squid-giant, colossal, giant octopus f. Elephants-giants and Cyclops g. ACTIVITY: Student mini-presentations
3	1/23	Cryptids Based on Real Organisms a. Mistaken identity-Montauk monster, chupacabra, sloth in South America, b. Exaggerations-giant snakes, sharks and other fish, c. Unusual forms of known species-king cheetah, striped mantas, spotted lions d. Extinct Animals-mokele-mbembe, thylacine, wolves and cats, hobbit erectus, Megalodon e. Displaced known animals-wild cats, pythons in Everglades, f. ACTIVITY: student minipresentations
4	1/30	Land Monsters a. Mythological creatures-leprechauns, faeries, gremlins, goblins, elves, b. Supernaturals-demons, succubi and incubi, vampires, zombies, werebeings c. Historical perspective and the fossil record.
5	2/6	a. Unknown organisms-mothmen, Sasquatch and relatives, Sea and Lake Monsters-kraken, merpeople, Ogopogo, Champs, Nessie d. Natural weather phenomenon explanations e. Natural environmental phenomenon. f. ACTIVITY
6	2/13	a. Psychics b. How psychics use our natural brain tendencies to fool us. c. Five steps of cold reading. Activity: Zener test for ESP
7	2/20	Psychic Phenomena a. ESP, telekinesis and telepathy b. Near death experience, Ouiji boards and talking to the dead c. Other psychic phenomena d. Physiological explanation for near death experiences. e. The ideomotor effect f. ACTIVITY: Dowsing

	2/27	<p>Ghosts and Poltergeists</p> <ul style="list-style-type: none"> a. history of the phenomenon b. The brain's face processing mechanism c. Scientific problems ghosts have. d. "Evolution" of pareidolia <p style="text-align: center;">ACTIVITY: Find and photograph pareidolia on campus</p>
9	3/6	<p>Extraterrestrials</p> <ul style="list-style-type: none"> a. Area 51 b. SESI and current scientific research into extraterrestrial life. c. Why are there less reports now and what is the future of UFO's? d. Astronomy 101 e. The physics of space travel. f. Defining life in biological terms g. ACTIVITY: Analysis of the Drake Equation
10	3/13	<p>The Scientific Method</p> <ul style="list-style-type: none"> a. What is it b. What it isn't <p style="text-align: center;">Activity: Library research</p>
11	3/20	<p>The Neuroscience of Belief:</p> <ul style="list-style-type: none"> a. The brains basic components b. How the brain works
12	3/27	Spring Break
13	4/3	<p>The Cognitive Biases of Belief</p> <ul style="list-style-type: none"> a. Confirmation bias, authority bias, hindsight bias, causation by correlation errors b. Evolutionary biology and the Evolution of the Human Belief System c. Patterns of belief d. Process of Agentivity e. Folk numeracy f. ACTIVITY: Analysis of website
	4/10	<p>Whats the harm?</p> <ul style="list-style-type: none"> a. Alternative medicine vs evidence based medicine b. Conspiracy theorists c. Science in the business office and the courtroom. d. ACTIVITY: Test for effectiveness of lucky charm
15	4/17	Presentations
16	4/24	Presentations
17	May 1st	<u>Final Exam 1 :00-3 :00</u>