

# Foundations of Science - Honors

## Fall Semester 2017

**Course Number:** BIOL 1436.02

**Class Time:** Tuesday & Thursday (8:00-9:20 PM)

**Class Meeting Room:** Lee Drain Building (LDB) 220

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**Office Hours:** Mon/Tues 9:30-11:00 AM

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**Catalog Description:** The course focuses on the nature of science as a reliable method of acquiring knowledge about the natural world. Students will learn how to apply key scientific facts, concepts, laws and theories to distinguish science from non-science, bad science, and pseudoscience by analyzing a variety of claims and case studies. By employing an innovative, interdisciplinary approach to science education, this course is designed to increase science literacy and critical thinking skills for introductory-level students who are not science majors. **Students MUST enroll concurrently in the corresponding lab for this course.** Credit: 4

**Course Description/Rationale:** The rationale for this course is to enhance your scientific literacy by making science both interesting and relevant. This will be accomplished by helping you understand how science works and how you can apply science in your daily life, especially when evaluating extraordinary/unusual claims in which almost everyone is interested – including UFOs, ESP, and mysterious creatures like Big Foot.

Accordingly, the overarching objectives of this course are to enhance your scientific literacy and critical thinking skills using an integrated, multidisciplinary approach that draws upon key concepts from the natural sciences, psychology, and critical thinking. The three broad goals of this integrated course are:

- 1) to enhance your understanding and appreciation of science as a proven and reliable method of comprehending the natural world, and to help you distinguish scientific from non-scientific and pseudoscientific ways of thinking about the world;
- 2) to provide you with a more well-rounded understanding of science by teaching you the basic principles, facts, laws, and theories from the natural sciences and, when relevant, from psychology;
- 3) to teach you specific rules of critical thinking so that you can use them, and your knowledge of science and the scientific method, to make more informed decisions. All three goals are inseparable and are interwoven throughout the course.

These three goals will be accomplished by using information from the natural sciences, the scientific method, and rules of critical thinking to examine a range of claims that are common in our society. These claims include, but are not limited to, extraordinary claims and pseudoscientific claims such as those pertaining to astrology, UFOs, legendary creatures, the lost continent of Atlantis, alternative medicines, paranormal phenomena, and others. Through an examination of these and other topics, as well as the evidence for key scientific theories, you will learn more about the nature of science and the scientific

method, how to more reliably evaluate the veracity of claims, and how to avoid common errors in reasoning that lead to erroneous conclusions. [This knowledge will help protect you from fraudulent and misleading claims and will enable you to make more informed decisions regarding issues of significance to our society.](#) Finally, it is my hope that you will gain a greater appreciation of the beauty and wonder of the natural world as revealed by science.

**Upon successful completion of the course, you will be able to:**

1. Understand and apply scientific terminology pertaining to the nature and conduct of science, such as hypothesis, law, theory, control group, placebo group, confirmation bias, and double-blind study;
2. Apply methods of reasoning used by scientists: i.e., the scientific method based on the requirements of falsifiability/testability, logical consistency, comprehensiveness of evidence, intellectual honesty (objectivity), replication of results, and sufficiency of evidence;
3. Analyze and evaluate common logical fallacies and perceptual biases that interfere with the ability to draw reasonable and/or correct conclusions, as well as the difference between facts, informed opinions, and uninformed opinions;
4. Learn key concepts and theories from a variety of scientific disciplines, especially physics, biology, and geology;
5. Demonstrate how to distinguish science from pseudoscience by scientifically evaluating a wide variety of extraordinary claims that are common in our culture today.

Just as importantly, upon completion of this course, we hope that you will have a greater appreciation of the role of science in all of our lives and the need for scientific literacy and critical thinking to help make informed decisions about issues currently facing our society.

**Methods of Instruction:** This course is based on a combination of traditional lecture format, coupled with the use of “**case studies**” which involve classroom-based group work, class discussions, homework assignments, and readings. The use of [case studies \(which are stories with an educational purpose\)](#) has been shown to: significantly increase student interest, enjoyment, and involvement with a course; improve grades; and enhance students’ critical thinking ability.

[\*\*Students are required to take the lab concurrently\*\*](#) because the lecture and lab constitute a single course. The lab is also based on the use of case studies.

**Course Materials:** There are two textbooks for the course and a lab manual. The first book listed below (Foundations of Science) is an integrated science text that provides the scientific knowledge for the course. The second text (How to Think about Weird Things) provides an understanding of how to use both critical thinking and scientific reasoning to evaluate extraordinary/weird claims.

1) ***Foundations of Science Lab Manual*** ISBN 978-0738091907 **REQUIRED**

2) ***How to Think About Weird Things: Critical Thinking for a New Age*** – 7e, 2013, by Theodore Schick and Lewis Vaughn, McGraw-Hill. ISBN 978-0078038365 (paperback). **REQUIRED**

3) ***Trick or Treatment: The Undeniable Facts About Alternative Medicine*** – 9e, 2007 (2005), by Simon Singh & Ernst Edzard, W.W. Norton. ISBN 978-0393337785 **REQUIRED**

4) ***Denying to the Grave*** – by Sara E. Gorman & Jack M. Gorman. ISBN 978-0199396603 **REQUIRED**

5) ten of the little green 15-question Scantrons (Quizzstrip 815-E)

~6) ***Foundations of Science - Custom*** Pearson/Addison-Wesley, San Francisco. ISBN 978-1269685535 ~**RECOMMENDED**

**Supplementary Readings:** If used, these will be distributed in class or on BlackBoard.

### Grading Criteria

**Because the lecture and lab portions of the course are considered to be part of the *same* course, the final course grade is based on a combination of lecture tests, lecture coursework, *and* lab work. In other words, there is no separate lab grade.**

Grading will be based on 3 lecture exams, nine (9) sets of reading questions, group-norm development, ~2.5 in-class group case studies, ~3.5 group homework assignments, individual and group lab quiz grades, peer evaluations by your fellow group members in both lecture and lab (see details below), a syllabus quiz, journals, and attendance. You will also be given a **critical thinking assessment** at the ***beginning and end*** of the semester that serves as **extra credit**. This extra credit can be very important to your overall grade, so PLEASE do your best on both exams!

*Please note that the number of assignments may be changed slightly (e.g., add or drop a homework assignment) if circumstances warrant such a change. If this happens, it will have a slight effect on the percentage points associated with each aspect of the course.*

In an integrated course such as this, each topic serves as the foundation for subsequent material; consequently, **students should remember and understand all of the basic principles covered previously in the course** in order to apply them in the case studies and labs, and to do well on exams.

**Tests:** There are 3 major exams and each will consist of multiple-choice, matching, essay, and short answer-type questions.

**Reading Quizzes:** Each week, you will be assigned readings from the books listed above and, in some cases, from PowerPoint lectures that are posted on BlackBoard but which are not discussed in class. To ensure that students read these assignments, **a set of reading questions will normally be given every two weeks over the reading material**. These assignments will be ***completed outside of class online, in BlackBoard***. You are asked to *use both your books and notes* to complete the assignments. Once available, you may re-take the reading quiz assignment as many times as you wish before the due date for the reading assignment. If you experience computer problems, please contact the online helpdesk (936-294-2780) before the assignment is due. The reading quizzes will be available for a week, or more, before they are due. **They can be retaken as many times as you want before the due date and it is the highest score that is accepted**. The quizzes are randomly created from a pool of questions. The pool typically consists of 60 to 90 questions. Because the computer randomly selects questions from the question pool when it generates a quiz, each version of

the quiz will be different and may consist of some questions that are repeated, as well as new questions. The more times you take it, the more questions you will see before the test. We suggest you complete the reading quizzes early, should you have questions or computer problems. Because the reading quizzes are available for an extended period of time and can be re-taken before the due date, *late reading quizzes will not be accepted*. We do not recommend waiting to the last available day to complete the reading quizzes, as you may experience computer and/or technical issues. By attempting the quizzes earlier in the week, you will ensure you earn a higher grade and submit the assignment on time.

As regards the reading assignments, **I strongly recommend that you thoroughly read the material – don't just skim it.** If you try to avoid actually reading the material and, instead, merely skim the chapter until you find something that 'looks right,' you will *not* learn the material. This technique really doesn't work because, as emphasized throughout the course, facts presented in isolation from one another don't make sense. You have to see the connections among the facts in order to make sense of them – and to remember them! This is why reading *all* of the material for comprehension does work!

*Pacing your work is the key to not being overwhelmed!*

Once the quizzes have been submitted, the answers will be posted on BB. A screen will show you which questions you earned credit on and which you missed. In many cases, explanations are provided for the answers as well. Many students print off their completion reports for study guides. Please remember that this course is about *understanding and reasoning – not memorization*. So, you should always look over the completion reports to ensure that you understand the concepts. In other words, the quizzes and completion reports serve as a study guide for the readings.

**Journals:** There will be 9 journaling events throughout the course. Journals will be graded anonymously. Journals will follow a modified Critical Incident Framework (with the inclusion of bias and social judgement theory).

**Case Studies & Peer Evaluation:** In this class, students will be divided into groups by the instructor in such a way as to ensure maximum diversity in the group. Each group will consist of about 4 students who will work together throughout the semester on both case studies and group homework. As you will see, **group scores are usually better than individual scores, and so this process normally improves an individual's grade.** In addition, *group effort helps everyone learn the material better because everyone is involved in teaching one another.* So, individuals normally do better on tests as a result of this prior group preparation process – assuming they put in the effort.

**Many students are initially uneasy about the idea of working in groups** because it is often the case that, in previous classes, some members of their group did all or most of the work, while others did little or nothing – but everyone received an equivalent grade. This should not be a problem in this course because of the importance of group peer evaluation procedures to a student's grade. The procedures for performing peer evaluations are described below.

Groups will create (and continually revise) a set of group-norms throughout the semester. If conflict within the group arises, the instructor will refer to the group-norms during remediation. Groups will not be broken-up, unless the instructor (and most likely the dean of students) find it necessary to do so. Group assignments will be turned in and completed as a group – this means a group consensus will have to be agreed upon before turning in an assignment. Exceptions will not be granted.

## Peer Evaluation Process

You will evaluate each of your group members, including yourself, on a 10 point scale. (0=no work, 10=full participation) Please note that 10 is the maximum number of points that may be awarded.

You must be fair in your assessments, but if someone in your group did not contribute adequately, then you should give them fewer points. **If they were not present or did not contribute to an assignment, they should receive zero points.**

It is imperative that you assign these scores **PRIVATELY** (NOT in front of your team members) AND that you do this on the day the case study was conducted or the assignment turned in! **It is also critically important that you do not 'agree' to give each other good scores. This is guaranteed to undermine the integrity of the process and will inevitably result in bad feelings if someone in the group doesn't do his or her fair share of the work because he or she thinks they're going to get a good score no matter what they do.**

**At the end of the semester, your peer evaluation score is equal to the average of the amount of peer evaluation points you received from the members of your group - converted to a percent. Accordingly, an average of 10 points equals 100%; an average of 90 equals 90%, and so on. This score is then used to determine the number of group points that you will receive at the end of the semester.** If you receive an average of 10, you will receive 100% of the points earned by your group on the group assignments. If you receive an average of 9.2, then you will receive 92% of the group points, and so on.

**If you have an average of less than 7, you will not receive ANY of the group points.**

**Use the following additional criteria when assigning points:**

- 1) Be fair! If a person made a genuine effort to contribute, then award 10. ***Do not give points to a student for an assignment if that student was absent the day a group assignment was done in class. And, do not give any points on a group homework assignment if the person did not contribute.***
- 2) You cannot give anyone in your group more than 10 points. (This prevents people from giving their friends an unfairly large amount of points, which would necessarily hurt other members of the group because there would be less points to distribute to other group members).
- 3) **You do not have to distribute all of the points.** If someone does not contribute appropriately, then give him or her less than 10 points. And, as stated previously, if someone is absent in your group on the day of the assignment, then give him/her no points; i.e., a zero.
- 4) **Anyone receiving an average of less than 7.0 on his or her peer evaluation at the end of the semester will automatically lose his or her group-based points.** So, for example, if a student receives an average of less than 7.0 in lecture, the student will lose all of the group-based points earned by the group in lecture. This amounts to a maximum 580 points out of 4720 possible in the course and constitutes 12.2% of the total course grade; i.e., just over one letter grade. In the same way, if a student receives an average of less than 7.0 on his or her peer evaluation in lab, the student will lose all of the group-based points in lab, which is a maximum of 450 points. This equals 9.5% of the total course grade. And, if a student received less than 7.0 in *both* lecture and lab, they would lose up to 21.8% of the total course points; i.e., more than 2 letter grades. The point is, ***“Do your best to contribute to the group😊!”***

- 5) Failure to peer evaluate correctly (and/or on-time) results in the loss of overall course points. Please see peer evaluation online application or peer evaluation form for details.

**It is the last 2 rules that normally ensure everyone will contribute to the group's efforts!** Also, the fact that the score is an average prevents anyone who might be unfair in the awarding of points from single-handedly undermining the final grade of a group member. And, if one student gives a score that is much less than those of other students (which implies that it is unfair), ***I have the option of ignoring that score.*** In fact, I can override a low average score if there is evidence that the grade was unfairly assigned by the group. ***This serves as a safety net for each student.***

This type of peer-evaluation method has been used in many universities and works very well. Students like it because it encourages everyone to pull their own weight and contribute to the group.

Example: Imagine that a student named Linda received peer evaluation amounts in lecture of 8, 10, 9, 10, and 10, for a total of 47, which is an average of 9.4, or 94%. John received all 10s and so received all of the group points. Billy, who skipped class, didn't sit with his group, and contributed very little to the group, received scores of 2, 0, 3, 0, and 2 for a total of 7 points and an average of 1.4, or 14%. So, Linda received 92% of the group's overall grade for the semester. With an average of 14%, poor Billy lost 580 points, which means his overall course grade dropped by 1.2 letter grades. And, because his average was 71% before the deduction, Billy failed the course ( $71\% - 12.2\% = 58.8\%$ ). This is not the happy ending any of us wants to see!

## ***How to Earn a Good Peer Evaluation Score***

- 1) **Sit with your group every day and learn everyone's names. Get to know them.**
- 2) **Come prepared to contribute** to the case studies and quizzes by attending all classes (so you know what's going on), and reading the assigned material. In other words, make sure you can and do contribute constructively to the discussions.
- 3) **Be positive and friendly and treat the other members of the group the way you want to be treated.** In other words, be courteous and respectful of others' comments and ideas - even if you don't agree with them. Be willing to accept that your initial thoughts might be incorrect, but also don't be afraid to courteously express your views even if they are different from those of others in the group.
- 4) **Contribute significantly to the group homework assignments.** Do your part and **do it on time – not at the last minute.** \* You should keep a copy of what you have written in case there is a dispute regarding your contribution. Remember, I can override the group's evaluation in the unlikely event that it was unfair. ***However, this normally requires that you be able to document what you contributed so that I can base my decision on evidence rather than hearsay.***
- 5) **Come to any and all group meetings and, if you absolutely cannot be at a meeting because of work or other legitimate schedule conflicts, make sure you keep in touch** with the group via e-mail, Facebook, or phone and let them know ***ahead of time*** that you can't come. Most people will understand if they know someone has legitimate reasons for not attending a meeting. But, you need to contribute ideas, written material, etc., even if you can't join the group in person.



**An initial, trial peer evaluation will be done approximately half way through the semester.** This evaluation will NOT count as part of the grade and will serve only to give each person feedback from the members of his or her group so that he or she can correct any problems that might exist.

**Very important note:** Although points are not given for completing peer evaluations, points will be deducted if the rules described above were not followed and/or if you do not submit a peer evaluation for your group members. **Specifically, 40 points will be deducted for not submitting a peer evaluation when it is requested.** So, please do the evaluation!

### **Attendance and Make-up Policies**

This course abides by University Policy and Regulations concerning attendance (See the Undergraduate Catalog). Accordingly, "regular and punctual attendance" is expected of each student at Sam Houston State University:

In a course such as this, in which group effort is a significant part of the grade, students genuinely need to come to class so that they can contribute to their group's success. Those who are prepared and contribute positively will be highly valued by their group! **This course also moves quickly and many ideas build on one another and are used throughout the course.** So, if a student misses class, he or she will almost certainly be hurt academically. In short, attendance matters and *is required*.

Because attendance *is* so important, ***students will need to keep records for their absences and documentation for those absences. It is the student's responsibility to provide documentation for said absences. Student will lose points (see below) for each unexcused absence after 3 (so please keep track).*** (In order for an absence to be *excused*, some form of documentation must be provided to show that it was legitimate; this can include a physician's note, a funeral announcement, legal notice, etc. **The documentation must be provided within one week of the 4<sup>th</sup> absence.** It is the student's responsibility to check with the instructor, before the absence, to determine if an absence will be excused. Also, tardies can be counted as absences. So, if a student misses 6 times, is tardy 6 times, or has some combination thereof (e.g., three unexcused absences and three tardies), he or she will lose 480 points from their overall grade.

**A student that misses 6 or more classes (excused/unexcused) automatically FAILS THE COURSE**

**So, please come to class!**

#### **Examples**

**0-3 absences/tardies – no point deduction**

**4 absences/tardies – minus 400 points (10%)**

**5 absences/tardies – minus 800 points (20%)**

**≥ 6 absences/tardies = Fail ('F')**

**Please understand that these policies are intended to prevent students from failing the class because of skipping so many classes that they can't learn the material. In effect, these attendance rules keep most students on track and reduces the number of students that might otherwise fail the course.**

1. In addition to the required attendance/tardy policy, it is important that you stay for the entire class - **- please do not leave the classroom early** unless you are sick or have cleared it with me before class begins. **Students can be counted absent if they leave the class early without permission.**
2. If you know you will miss a class (because of an excusable event, such as an "away" baseball game and you are a member of SHSU's baseball team), it is polite to inform the instructor ahead of time.

If, for whatever reason, you **miss an exam**, please contact me as soon as possible to determine if and when the exam may be made-up. Make-up exercises and exams are only allowed based on my approval, and only if you have contacted me within a reasonable amount of time. Make-ups will be scheduled for students who notify the instructor (one day!) following the absence.

### **3. Late Work Policy: Late work will not be accepted.**

Please check BlackBoard as soon as the grades are posted. **Students have a maximum of two weeks to contest a grade.** For example, if the grade is incorrect, you need to notify me within two weeks of my posting of the grade. After two weeks, if no errors have been reported to me, the grade stands as is.

**What happens if you miss a Case Study?** If you miss a case study in lecture because of an excused absence, you can partially make it up by completing it on your own. This will entail writing an essay response to any questions that may have been asked in class regarding the case, as well as taking the quiz over the case study. **The maximum score that a student can achieve is the score earned on the assignment, OR the group's score – whichever is lower.** This policy ensures that your grade is tied to the group grade, but it also provides some grade 'cushion' for those that may be sick or unable to come to class on the day of the case study, while also discouraging students from simply skipping the day of a case study. *Please remember that your group must (based on the rules for peer evaluations) give you a zero for group participation on the case study if you are absent.*

## **Lab Grades**

**The lab grade will consist of both individual scores and group-derived scores.** Most of the labs will be based on case studies that will involve instructor-led discussions in which members of groups work together to develop responses, propose hypotheses and experimental designs, or offer explanations for what has been reported or observed. In short, labs involve a lot of discussion – both within each group and among groups. The lab instructor will facilitate these discussions. The discussions make the labs fun and interesting because they are not based simply on rote memorization and fill-in-the-blank activities; rather, they involve group discussion and exploration of topics.

**At the beginning of the lab, each student will be given a short, Individual Lab Quiz (ILQ)** over the information provided in the lab readings and relevant readings assigned in lecture. This is intended to ensure that everyone reads the *lab exercise and textbook background readings* (listed on the lecture syllabus) *before coming to class so* they will be prepared for the lab discussion. The quiz will include some vocabulary terms listed at the end of the lab exercise and related lecture notes and readings. Questions will be multiple-choice and/or short answer essay.



**At the end of the lab, each group will be given a Group Lab Quiz (GLQ)** regarding the information covered in lab. The group will work together as a team to complete it. Groups will be created by the lab instructor at the beginning of the year. The purpose for the group work is to enhance understanding of the material by having group members help teach each other the material and reinforce the key concepts covered in the lab. The group scores obtained over the semester will be adjusted by the peer evaluation score the student receives from his/her peers using the procedures outlined on the peer evaluation form. Failure to peer evaluate correctly results in a loss of overall course points.

A total of 10 lab case studies will be completed and **students will be allowed to drop both their lowest individual lab quiz (ILO) and their lowest group lab quiz (GLO) grade.** Accordingly, the lab quizzes, both individual and group, total 1000 points. These points will account for approximately 25% of your overall course grade.

In summary, students can earn 600 *individual* points and 400 *group* points. **Please remember that, in this course, the lecture and lab grades are combined to determine your overall course grade.** Thus, there is a total of 1000 lab points possible in lab.

In total, the lab portion of the course grade constitutes 25% of your grade – which is almost identical to the amount that would be earned relative to a standard lecture + lab class. In other words, if you took a science class in which the lecture and lab were separate, and earned 4 hours of credit for this combination, the lab would constitute 1 of 4 total hours, or 25% of the grade component for the science class. **However, please remember that, in this course, the lecture and lab grades are combined to determine your overall course grade.**

### Extra Credit

**At both the beginning and end of the semester, you will be given the opportunity to earn extra credit worth up to 9% of the total course grade!** That's 360 points! This opportunity to significantly improve your grade will be in the form of a critical thinking assessment – either the CAT assessment or the FSE assessment. This assessment, which will be given in lab, is required by the University's reaccreditation requirements. It is extremely important that you do your best on both exams because your scores reflect upon the university and indicates how well our students are doing relative to students at other universities in the United States. It's your chance to not only earn a lot of bonus points, but also to make SHSU look good! So, please do your best.

Each assessment is worth 120 points. The grading procedure for this assessment consists of simply *adding* the two scores together. However, if the sum of the two scores is above 144 points, a *multiplier* is used to further increase the number of points you can earn. (It's a bit like the multiplier used on some lotteries.) This means that the procedure for awarding bonus points is very generous.

For example, if you made a combined score of 110 points on the assessments, the 110 points will be added to your grade. **And, if your total on both assessments is greater than 144 points, you will receive even more extra credit points!** The amount you would receive for scoring above 144 points is equal to the number of points you earn above 144, *multiplied by 2* – **with a maximum of 180 extra points possible.** (180 points is equal to 4.5% of the course grade.) **So, if you received the maximum number points on these exams, you would receive a grand total of 360 bonus points (9% of the course grade), which is almost an entire letter grade!** This is why it's important to do your best on both assessments.

For example, if you made a 70 the first time you took the assessment and a 95 the second time, you would have earned a total of 165 points. Because the combined score for the two assessments is 21 points more than 144 points, the multiplier is used and you would earn 42 *more* bonus points in addition to the 165 you'd already earned:  $165 - 144 = 21$ ;  $21 \times 2 = 42$ ; **165 + 42 = 207 total bonus points**). \*Because these are bonus points, they would NOT be adjusted by a peer score. They're all yours!

Because you are being asked to take this critical thinking assessment at the beginning of the semester (the pre-test) before you have been taught the course material, we do not want you to be discouraged if you do not do as well as you might have expected on the pre-test. That is why we give additional bonus points if you achieve a combined score above 144 – which is a mere 60% of the possible points on the assessments! Because the score on the second assessment (the post-test) **SHOULD improve if you learn from the course and you do your best on the assessment**, you can easily make a good overall score and earn a significant number of bonus points. *You should know that a few students have actually earned the maximum number of bonus points possible!*

*Please note that these assessments are the only possible sources of extra credit in the course. In other words, no individual extra credit is given and, with the exception of one lab grade, no grades are dropped.*

### **Grade Determination**

**Your grade is based on the percentage of points earned relative to the maximum number possible for the course (4,000).** Although group effort is fundamentally important to the design of the course and to the way in which labs and case studies are run, **your grade is determined primarily by your individual scores; i.e., by your individual effort.** In short, you are ultimately responsible for the majority of the grade points you earn in the course. **The group work should help you *do better* by helping you learn the material more thoroughly.**

**Please note that The State of Texas REQUIRES that universities have students engage in group activities because it is crucial to their career preparation. This is an additional reason why group work is required and why you will evaluate one another's contributions to the group.**

All of the tests and assignments for the course, including lab assignments, are listed in the [Score Sheet](#). To keep track of your grades, **you need to record each and every grade you receive on this sheet.** *(Please note that Black Board will not calculate your grade; it's simply a place to store the grades for individual assignments.)*

### **Point range for final course grade**

A = 3578-4000

C = 2778-3177

B = 3178-3577

F = less than 2778

**Academic Honesty:** All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of

academic work will be subject to disciplinary action that is consistent with university policies. Please read the following:

- 1) Students are encouraged to study in groups to prepare for tests. However, “group effort” is definitely not permitted when taking exams! This will result in an automatic zero on a test. Two such occurrences will result in an F in the course.

**Proper Course Behavior:** All of these rules are standard and are based on common courtesy, respect, and honesty – all of which are necessary to ensure a positive learning environment.

- 1) Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Cellular telephones, pagers and ALL other electronic communication devices must be turned off before class begins.

Students are prohibited from eating or drinking in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom will result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

- 2) *Please do not use cell phones, laptops, I-pods, or other unapproved electronic device in class at any time, unless instructed to do so, because it distracts not only you, but the instructor and other students.*

If you have an emergency-type situation that requires that you be in cell phone contact with someone (e.g., relative in hospital; spouse overseas in the military), then please tell me before class begins and put the phone in the vibrate mode.

- 3) **Please come to class on time**—there is no reason to be late to class on a frequent basis.
- 4) **Please remain in class until it is finished** because **leaving early disrupts the class and will count as an absence unless you have cleared it with me, or unless it is an emergency.** If you have a job that overlaps with class time, then you need to drop the course or change your work schedule.
- 5) Please remove hats during exams.
- 6) **For obvious reasons, students CANNOT LEAVE THE ROOM DURING AN EXAM and then return.** If this happens, the test will be taken up and your grade will be based on the portion of the test that you completed. **If you have a cold or allergy, please bring tissues to class so that you won’t want to leave to get tissues during the test.**

**Study Tips:** Please read and follow these tips to enhance your grade in the course. I want you to do well!

1. **This course deals with arguments and evidence for or against certain claims. So, in order to study, you should imagine that you have been asked to write an essay in which you must present evidence and arguments to either support or refute a claim. This helps you learn and retain the material – and it makes the learning process more fun and interesting. This approach amounts to pretending that you are teaching the material to someone else.** You cannot simply memorize

your notes and definitions and expect to do well on the tests. You must truly understand the material in order to obtain a good grade.

2. **Take notes.** Taking requires active listening; i.e., a conscious attempt to determine what is important and to look for connections between ideas. Lectures aren't simply a bunch of facts and definitions thrown together. **In the class, the lectures are arguments either for or against certain claims and you'll need to understand the arguments.**
3. **Review your notes before the next class.** Constant reviewing will help you learn the material in smaller 'bites' of information – which makes it much easier to learn. Just as importantly, reviewing your notes before the next lecture will help you see how the previous material connects with the material to be covered in the upcoming class.
4. This course requires that students learn a significant amount of material on their own, independent from the lecture material. Furthermore, the reading quizzes are based on the reading material! **So, reading the textbooks and reader for this course really, truly is a necessity. *The ability to learn on your own is one of the most important skills you will learn in college, and it is one of the most important skills that employers look for in job candidates.***
5. When it comes time to **review for an exam**, first read the highlighted portions of the text, then concentrate on your notes. You might also want to follow the procedures below:
  - a. As you review your notes, first concentrate on absorbing the key ideas and understanding the organization of the material - why certain ideas followed others in the class and how they are related.
  - b. Once this is done, begin to focus on the details - the "whys." As stated above, **tests in this course are absolutely not based on the mere memorization of definitions, or on the recognition of verbatim statements from lecture**; rather, the test questions assume you already know the definitions and that you understand the concepts discussed in lecture. **So, you will not be asked definitions; rather you will be asked to apply facts and principles, i.e., to think with the information you have learned.** Of course, you have to know the definitions to begin the process of answering questions; so, by all means, learn the definitions as the first step in learning the material☺

**Visitors in the Classroom:** Unannounced visitors to the classroom must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom. This policy is not intended to discourage occasional visiting of classes by responsible persons.

**Americans with Disabilities Act:** It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail [disability@shsu.edu](mailto:disability@shsu.edu)). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:

<http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

**Religious Holy Days:** If a student desires to be excused from class, assignment, or a test on a religious holy day, then the student must notify the instructor of each scheduled class that he/she will be absent for religious reasons. In such cases, the student will be required to take the test or submit the assignment early—unless there are good reasons for not being able to do so and the instructor has agreed to those reasons.

**Special Circumstances:** If unusual circumstances arise during the semester, such as a medical problem, death in the family, etc., which adversely affects your attendance **PLEASE discuss this with me immediately and provide documentation. Do not wait until the end of the semester to discuss the problem with me.** If you keep me informed, I will gladly do my best to help you navigate the situation (within the context of school/attendance). However, please understand that, because of the nature of the course, there are limits as to how much can be excused and so, at some point, it may be necessary for you to drop the course. Also, if you wait until after-the-fact, at the end of the semester, to let me know that you were experiencing these adverse circumstances, there is nothing I can do about it at that time. I cannot retroactively make accommodations and I do not give additional extra credit assignments to make up for grade deficiencies.

**SCHEDULE:** \*This schedule is subject to change at any time based on class progress.

Tentative Schedule			
Week		Class	Labs
1 <sup>st</sup>	8/24	Introduction, Form Groups, Group Norms	No lab
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2 <sup>nd</sup>	8/29	Mystery Tube	Intro/Groups/ExtCredit
	8/31	Begin Nature of Science Syllabus Quiz due Reading Quiz 1 due	
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3 <sup>rd</sup>	9/05	Continue Nature of Science	Mystery Tube
	9/07	Finish Nature of Science Begin Limits to Perception and Memory Reading Quiz 2 due	
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4 <sup>th</sup>	9/12	Xango Case Study & Finish Mystery Tube	Checks Lab
	9/14	Continue Limits to Perception and Memory Reading Quiz 3 due	
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5 <sup>th</sup>	9/19	Finish Limits to Perception and Memory	Salem Lab
	9/21	Argument Study & field questions for Test 1	
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6 <sup>th</sup>	9/26	Test 1	Fast/Forgetful Lab
	9/28	Begin Astronomy Lecture Denying to the Grave Discussion	
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7 <sup>th</sup>	10/03	Continue Astronomy Lecture Denying to the Grave Discussion	Astrology Lab
	10/05	Continue Astronomy Lecture Denying to the Grave Discussion Reading Quiz 4 due	
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8 <sup>th</sup>	10/10	Finish Astronomy Lecture	Star Trek Lab
	10/12	Begin Physics & Paranormal Lecture	



<u>Week</u>	<u>Class</u>	<u>Labs</u>
9 <sup>th</sup>	10/17 Continue <b>Physics &amp; Paranormal</b> Lecture	<u><b>Haunting Lab</b></u>
	10/19 Finish <b>Physics &amp; Paranormal</b> Lecture & field questions for Test 2 <b>Reading Quiz 5 due</b>	
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10 <sup>th</sup>	<b>10/24 Test 2</b>	<u><b>Apple a Day Lab</b></u>
	10/26 Begin <b>CAM</b> lecture & Introduce <u><b>CAM Experiment</b></u> <i>Trick or Treatment</i> Discussion	
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11 <sup>th</sup>	10/30 <i>Vaccine-Autism Case Study</i> <i>Trick or Treatment</i> Discussion	<u><b>CAM Experiment</b></u>
	11/02 Finish <b>CAM</b> lecture <i>Trick or Treatment</i> Discussion <b>Reading Quiz 6 due</b>	
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13 <sup>th</sup>	11/07 <i>AAW Case Study (may have to be homework)</i>	<u><b>Geology lab</b></u>
	11/09 Begin <b>Geology</b> Lecture <b>Reading Quiz 7 due</b>	
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14 <sup>th</sup>	11/14 Continue <b>Geology</b> Lecture	<u><b>Extra Credit</b></u>
	11/16 <u><b>CAM Presentations</b></u>	
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15 <sup>th</sup>	11/21 Finish <b>Geology</b> Lecture & Begin <b>Genetics/Cell Repro</b> Lecture <b>Reading Quiz 8 due</b>	<u><b>No Lab</b></u>
	<b>Thanksgiving - No class on Thursday</b>	
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16 <sup>th</sup>	11/28 Finish <b>Genetics/Cell Repro</b> Lecture Begin <b>Evolution</b> Lecture <b>Reading Quiz 9 due</b>	<u><b>Nat. Selection Lab</b></u>
	11/30 Finish <b>Evolution</b> Lecture & field questions for Test 3	
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17 <sup>th</sup>	<b>12/07 Test 3 (Noon-2:00 PM)</b>	<u><b>No Lab</b></u>