

**LIFE AND PHYSICAL SCIENCES**  
**Student Learning Outcome Alignment Form**

**Course Prefix/Number: BIOL 2301**

**Course Title: Anatomy & Physiology I**

<b>Core Objective</b>	<b>Course SLO</b>	<b>General Learning Activities</b>	<b>Assessment</b>
<b>Critical Thinking Skills</b>	(SLO #6) Use and understand the language of anatomy	Students will complete the lab Cell Membranes and Osmolarity. First, the students will be given an introduction to the plasma membrane via powerpoint illustrating the key concepts regarding movement of materials across the membrane. Then, in lab teams, they will prepare slides that expose sheep's blood to various types of solutions causing crenation, hemolysis, etc. They will observe the slides, draw their result, and determine what the effect each solution had on the blood cell. <a href="#">See attached activity.</a>	Grade. <a href="#">See attached rubric</a>
<b>Communication Skills</b>	(SLO #6) Use and understand the language of anatomy	Students will complete the lab Cell Membranes and Osmolarity. First, the students will be given an introduction to the plasma membrane via powerpoint illustrating the key concepts regarding movement of materials across the membrane. Then, in lab teams, they will prepare slides that expose sheep's blood to various types of solutions causing crenation, hemolysis, etc. They will observe the slides, draw their result, and determine what the effect each solution had on the blood cell. <a href="#">See attached activity.</a>	Grade. <a href="#">See attached rubric</a>

<p><b>Empirical &amp; Quantitative Skills</b></p>	<p>(SLO #6) Use and understand the language of anatomy</p>	<p>Students will complete the lab Cell Membranes and Osmolarity. First, the students will be given an introduction to the plasma membrane via powerpoint illustrating the key concepts regarding movement of materials across the membrane. Then, in lab teams, they will prepare slides that expose sheep's blood to various types of solutions causing crenation, hemolysis, etc. They will observe the slides, draw their result, and determine what the effect each solution had on the blood cell. <a href="#">See attached activity.</a></p>	<p>Grade. <a href="#">See attached rubric</a></p>
<p><b>Teamwork</b></p>	<p>(SLO #6) Use and understand the language of anatomy</p>	<p>Students will complete the lab Cell Membranes and Osmolarity. First, the students will be given an introduction to the plasma membrane via powerpoint illustrating the key concepts regarding movement of materials across the membrane. Then, in lab teams, they will prepare slides that expose sheep's blood to various types of solutions causing crenation, hemolysis, etc. They will observe the slides, draw their result, and determine what the effect each solution had on the blood cell. <a href="#">See attached activity.</a></p>	<p>Grade. <a href="#">See attached rubric</a></p>

# CRITICAL THINKING VALUE RUBRIC

Adapted for Texarkana College from the AAC&U Critical Thinking VALUE Rubric

## Definition

Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.

	<b>Does Not Meet Any Expectations</b>  <b>1</b>	<b>Meets Few Expectations</b>  <b>2</b>	<b>Meets Expectations</b>  <b>3</b>	<b>Exceeds Some Expectations</b>  <b>4</b>	<b>Exceeds All Expectations</b>  <b>5</b>
<b>Explanation of Issues</b>	Did not state issue.	Issue is stated without clarification or description.	Issue is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined and/or backgrounds unknown.	Issue is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.
<b>Evidence</b>	Does not identify the basic components of an issue	Information is taken from sources without any interpretation. Viewpoints of experts are taken as fact, without question	Information is taken from sources with some interpretation but not enough to develop a coherent analysis or synthesis.	Information is taken from sources with enough interpretation to develop a coherent analysis or synthesis.	Information is taken from sources with enough interpretation to develop a comprehensive analysis or synthesis.
<b>Influence of Context and Assumptions</b>	Did not show awareness of the issue.	Show an emerging awareness of present assumptions.	Questions some assumptions. Identifies relevant information when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Thoroughly analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.

<b>Student's Position</b>	Takes no position on issue	Specific position is stated but is simplistic and obvious.	Specific position acknowledges different sides of an issue.	Specific position takes into account the complexities of an issue. Others' points of view are acknowledged within position.	Specific position is imaginative. Limits of position acknowledged. Other points of view are synthesized.
<b>Conclusions and Related Outcomes</b>	Does not use previously learned information in new situations.	Conclusion is inconsistently tied to some of the information discussed; related outcomes are oversimplified.	Conclusion is logically tied to information; some related outcomes are identified.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes are identified clearly	Conclusions and related outcomes are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order

# Communication RUBRIC

Adapted for Texarkana College from the AAC&U Critical Thinking VALUE Rubric and Making Learning Real

## Definition

Written communication is the development and expression of ideas in writing.

Oral Communication is a prepared, purposeful presentation designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs, or behaviors.

Visual Communication is the use of images to persuade, entertain, inform, and enlighten an observing audience of products, ideas, and messages.

	<b>Does Not Meet Any Expectations</b> <b>1</b>	<b>Meets Few Expectations</b> <b>2</b>	<b>Meets Expectations</b> <b>3</b>	<b>Exceeds Some Expectations</b> <b>4</b>	<b>Exceeds All Expectations</b> <b>5</b>
<b>Quality of Information and Organization</b>	Presentation lacks main points and related details. Information lacks connection to the presentation topic. Information is not organized.	Main points are not clear and lack significant detail. Some information is linked to the presentation topic. Information is loosely organized.	Main points are somewhat clear but could use more detail. Most information is linked to the presentation topic. Information is organized.	Main points are clear and detailed. Information is linked to presentation topic. Information is well organized.	Main points are very clear and very detailed. Information is directly linked to presentation topic. Information is very organized.
<b>Nonverbal Communication</b>	Speaker appears very uneasy and insecure. Speaker faces away from the audience or makes no eye contact. Speaker appears disengaged from the audience. Speaker uses few body motions or gestures or has gestures or movements that distract the audience.	Speaker appears uneasy and somewhat insecure. Speaker rarely faces the audience or makes eye contact. Speaker rarely appears to be engaging with the audience. Speaker uses few body motions or has gestures or movements that distract the audience..	Speaker appears generally at ease and confident. Speaker sometimes faces the audience and maintains eye contact. Speaker sometimes appears to be engaging with the audience. Speaker's body motions and gestures neither support nor detract from presentation.	Speaker appears fairly comfortable and confident. Speaker generally faces the audience and maintains good eye contact. Speaker generally appears to be engaging with the audience. Speaker uses body motions and gestures well.	Speaker appears very comfortable and confident. Speaker consistently faces the audience and maintains good eye contact. Speaker consistently appears to be engaging with the audience. Speaker uses body motions and gestures very effectively.

<b>Quality of Verbal Communication</b>	Speaker's voice is consistently too weak or too strong. Speaker fails to use inflections to emphasize key points and create interest or often uses inflections inappropriately. Speaker's talking paces is consistently too slow or too fast.	Speaker's voice is frequently too weak or too strong. Speaker rarely uses inflections to emphasize key points and create interest or speaker sometimes uses inflections inappropriately. Speaker's talking pace is often too slow or too fast.	Speaker's voice is generally steady strong and clear. Speaker sometimes uses inflections to emphasize key points and create interest. Speaker's talking pace is appropriate.	Speaker's voice is steady, strong, and clear. Speaker often uses inflections to emphasize key points and create interest. Speaker's talking pace is mostly appropriate.	Speaker's voice is very confident, steady, strong, and clear. Speaker consistently uses inflections to emphasize key points or to create interest. Speaker's talking pace is consistently appropriate.
<b>Visual Tools</b>	Visual aids demonstrate no creativity or clarity and are often difficult to read. Presentation is weakened by the visual tools.	Visual aids have limited creativity or clarity or are sometimes difficult to read. Presentation is not enhanced by the visual tools.	Visual aids are reasonably creative, clear, and easy to read. Presentation is sometimes enhanced by the visual tools.	Visual aids are usually creative, clear, and easy to read. Presentation is often enhanced by the visual tools.	Visual aids are very creative, clear, and easy to read. Presentation is consistently enhanced by the visual tools.
<b>Appropriate Use of Vocabulary</b>	Few or no terms are included in the presentation. May or may not be used appropriately. Lacks context.	Several terms are included in the presentation. May or may not be used appropriately. May lack context.	Most terms are included in the presentation. Generally used appropriately. Generally used in appropriate context.	All terms are included in the presentation. Used effectively. Used in context.	All terms are included in the presentation. Used in unique and creative ways. Used in context
<b>Precision and Detail in Documents Produced</b>	Written documents have numerous errors and lack detail. Little care taken in the production.	Documents may have some errors and show some detail. Some care has been taken in production.	Evident that written documents are correct and show a general attention to detail and accuracy. General care has been taken in production.	Clearly evident that written documents are correct, detailed and accurate. Care has been taken in production.	Documents are clear, well-constructed, accurate, and show attention to detail. Extra care has been taken in the production of written documents.

<b>Overall Presentational Effectiveness</b>	The presentation was weak and not effective.	The presentation was average and somewhat effective.	The presentation was good and effective.	The presentation was very good and effective.	The presentation was exceptional and extremely effective.
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# Empirical and Quantitative Skills RUBRIC

Adapted for Texarkana College from the AAC&U Critical Thinking VALUE Rubric

## Definition

The ability to formulate an inquiry that is scientific or mathematical in nature, and then manipulate and analyze numerical data and/or follow an investigative process using empirical and/or quantitative reasoning to satisfy the inquiry and create informed conclusions.

	<b>Does Not Meet Any Expectations</b> <b>1</b>	<b>Meets Few Expectations</b> <b>2</b>	<b>Meets Expectations</b> <b>3</b>	<b>Exceeds Some Expectations</b> <b>4</b>	<b>Exceeds All Expectations</b> <b>5</b>
<b>Identification</b>	The purpose, components, and variables of the investigation/project are not identified.	The purpose, components, and variables of the investigation/project are somewhat identified.	The purpose, components, and variables of the investigation/project are mostly identified	The purpose, components, and variables of the investigation/project are clearly identified..	The purpose, components, and variables of the investigation/project are clearly identified.
<b>Assimilation</b>	The information that is required for an analysis of all investigative components is not evident. If applicable, values are incorrectly translated into variables and no necessary formulas are present.	The information that is required for an analysis of all investigative components is somewhat evident. If applicable, values are incorrectly translated into variables and some necessary formulas are present.	The information that is required for an analysis of all investigative components is mostly evident. If applicable, some values are correctly translated into variables and most necessary formulas are present.	The information that is required for an analysis of all investigative components is evident. If applicable, most values are correctly translated into variables and all necessary formulas are present.	The information that is required for an analysis of all investigative components is clearly evident. If applicable, values are correctly translated into variables and all necessary formulas are present.
<b>Analysis</b>	Most investigative or quantitative components are not scrutinized. The	Some investigative or quantitative components are scrutinized. Some	All investigative or quantitative components are somewhat	All investigative or quantitative components are scrutinized. The	All investigative or quantitative components are methodically

	steps followed are illogical and/or irrelevant to the desired result. The proper tools/ technology were not used and/or integrated into the final product. Any notation is not consistent and not defined.	steps followed are somewhat logical and relevant to the desired result. The proper tools/ technology were somewhat used and not integrated into the final product. Any notation is somewhat consistent but not defined.	scrutinized. The steps followed are mostly logical and relevant to the desired result. The proper tools/ technology were mostly used and somewhat integrated into the final product. Any notation is mostly consistent and defined.	steps followed are logical and relevant to the desired result. The proper tools/ technology were used and mostly integrated into the final product. Any notation is consistent and well defined.	scrutinized. The steps followed are logical and relevant to the desired result. The proper tools/ technology were used and well integrated into the final product. Any notation is consistent and well defined.
<b>Presentation</b>	A summary of the analysis is either inadequately presented or not presented at all. The presented information is mostly incorrect, and/or of poor quality, and/or the terminology/figures are inaccurate and/or hard to understand. Few or no visual representations of evidence are acceptably scaled/ represent the analysis findings.	A partial summary of the analysis is presented. The presented information is somewhat correct, of adequate quality, and the terminology/figures are somewhat accurate and relatively easy to understand. Some visual representations of evidence are acceptably scaled and represent the analysis findings.	A summary of the analysis is presented. The presented information is mostly correct, of good quality, and the terminology/figures are mostly accurate and easy to understand. Most visual representations of evidence are acceptably scaled and represent the analysis findings.	A good summary of the analysis is presented. The presented information is correct, of good quality, and the terminology/figures are accurate and easy to understand. Most visual representations of evidence are well-scaled and/or well represent the analysis findings..	A concise summary of the analysis is presented. The presented information is correct, of high quality, and the terminology/figures are accurate and easy to understand. All visual representations of evidence are well-scaled and well represent the analysis findings.
<b>Application</b>	The integration does not include all steps of the investigation and does not lead to an accurate, nor complete conclusion	The integration of most steps of the investigation lead to a somewhat accurate, partially complete conclusion that is	The coherent integration of most steps of the investigation lead to an accurate, mostly complete, acceptable conclusion that is	The coherent integration of all steps of the investigation lead to an accurate, mostly complete, relevant conclusion that is	The coherent integration of all steps of the investigation lead to an accurate, complete, relevant conclusion that

	that relates to the initial investigative argument.	relative to the initial investigative statement.	relative to the initial investigative statement.	relative to the initial investigative statement.	is relative to the initial investigative statement.
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# Teamwork Skills RUBRIC

Adapted for Texarkana College from the AAC&U Critical Thinking VALUE Rubric

## Definition

Teamwork is behaviors under the control of individual team members, their manner of interacting with others on team, and the quantity and quality of contributions they make to team discussions.

	Does Not Meet Any Expectations 1	Meets Few Expectations 2	Meets Expectations 3	Exceeds Some Expectations 4	Exceeds All Expectations 5
Contributes to Team Meetings	Does not collect any relevant information; no useful suggestions to address team's needs;	Shares ideas but does not advance the work of the group.	Offers new suggestions to advance the work of the group	Offers alternative solutions or courses of action that build on the ideas of others.	Helps the group move forward by articulating the merits of alternative ideas or proposals
Facilitates the Contributions of Team Members	Often argues with team mates; doesn't let anyone else talk; occasional personal attacks and "put-downs"; wants to have things done his way and does not listen to alternate approaches;	Engages group by taking turns and listening to others without interrupting.	Engages group by restating the views of other members and/or asking questions for clarification.	Engages group by constructively building upon or synthesizing the contributions of others..	Engages group by both constructively building upon and synthesizing the contributions of others as well as noticing when someone is not participating and inviting him/her to engage.
Individual Contributions Outside of Team Meetings	Completes no assigned tasks outside of team meetings.	Completes some assigned tasks by deadline.	Completes all assigned tasks by deadline; work accomplished advances the project.	Completes all assigned tasks by deadline; work accomplished and is thorough, comprehensive, and advances the project.	Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project. Proactively helps other team members complete their assigned tasks to a similar level of excellence.
Fosters Constructive Team Climate	Is argumentative and does not work with the team.	Supports a constructive group climate by treating other members respectfully.	Supports a constructive group climate by treating other	Supports a constructive group climate by treating other members respectfully,	Supports a constructive group climate by treating other members respectfully,

			members respectfully and conveying a positive attitude about the group and its work.	conveying a positive attitude about the group and its work, and motivating other group members.	conveying a positive attitude about the group and its work, motivating other group members, and providing assistance to group members.
Responds to Conflict	Is not present enough to engage in conflict.	Passively accepts alternate viewpoints/ideas/opinions.	Redirects focus toward common ground, toward task at hand (away from conflict)..	Identifies and acknowledges conflict and stays engaged with it.	Addresses conflict directly and helps to manage/resolve it in a way that strengthens overall group cohesiveness.

**Student Learning Outcomes (SLO)**  
**BIOL 2401**

1. Demonstrate a working knowledge of the language of anatomy involving anatomical position and related directional terms, planes regions, cavities, and membranes.

2. Differentiate between anatomy and physiology.

3. Explain the concept of homeostasis and describe how control systems operate to maintain homeostasis within the body systems.

4. Outline the role of cells, tissues organs and systems in the formation of an organism.

5. Understand the basic chemistry of the living organism, including chemical bonding, chemical reactions and inorganic and organic compounds.

6. Identify cellular structures and explain their functions.

7. Describe the cell cycle.

8. Describe the structure, function, and location of the four basic tissues in the body.

9. Identify and describe the structural features of the integumentary system and explain their functional roles in receiving, integrating, and conducting information.

10. Identify and describe the structural features of the skeletal system and explain their functional roles in osteogenesis and body movement.

11. Identify and describe the structural features of the muscular system and explain their functional roles.

12. Identify and describe major muscles and their actions.

13. Identify and describe the anatomy and physiology of the nervous system.

14. Identify and describe the anatomy and functions of the brain and its regions.

15. Describe the structure and function of the cranial nerves.

16. Describe the anatomy of the spinal cord and spinal nerves and their roles in reflexes.

17. Explain the physiology of sensory and motor pathways in the brain and spinal cord.

18. Identify and describe the structural features of the eye and ear, and explain the functional roles of vision, hearing, and equilibrium.

19. Identify and describe the anatomy and physiology of the autonomic nervous systems.

20. Compare and contrast the somatic and autonomic nervous systems.



## **Syllabus: Anatomy and Physiology I**

**Course Number: Biology 2401**

**Semester and Year: Spring 2013**

### **Instructor Information:**

**Edwin Braddock**

**Office: Biology 101**

**Telephone: Direct dial, 903.823.3290**

**E-mail: Ed.braddock@texarkanacollege.edu**

**Office hours: Mon. 1:15-4**

**Tues. 1:15-2:45, 5:30-6**

**Wed. 1:15-4**

**Thurs. 1:15-2:45, 5:30-6**

**Fri. 10-12 (We have meetings often on Friday; it is best if you schedule a time).**

### **Textbook Information:**

**Lecture: Seeley's Anatomy and Physiology, Vanputte, Regan, Russo, 9th ed.  
ISBN 978-0-07-352561-7**

**Lab: Hole's Human Anatomy and Physiology, Terry R. Martin, 13th ed.  
ISBN 978-0-07-739074-7**

**Websites that could be useful:**

**[www.mhhe.com/seeley9](http://www.mhhe.com/seeley9)**

**[www.mhprofessional.com](http://www.mhprofessional.com)**

**Learning Systems**

**ConnectPlus**

**LearnSmart**

**Dr. Crane may use a different lab book so ask him before you purchase a lab book; you-tube has several good sites.**

### **Student Learning Outcomes :**

- 1. Differentiate between anatomy and physiology.**
- 2. Demonstrate a working knowledge of the language of anatomy involving anatomical position and related directional terms, planes, regions, cavities, and membranes.**
- 3. Explain the concept of homeostasis and describe how control systems operate to maintain homeostasis within the body systems.**
- 4. Use fundamental principles of x-rays and radiodensity to explain x-ray imaging and CT scanning.**
- 5. Outline the role of cells, tissues, organs, and systems in the formation of an organism.**
- 6. Understand the basic chemistry of the living organism, including chemical bonding, chemical reactions, and inorganic and biochemical compounds.**

7. Identify certain cellular structures and explain their functions.
8. Describe the cell cycle and relate the short time dividing cells are in mitosis.
9. Describe the structure, function, and location of the four basic tissues of the body.
10. Identify and describe the structural features of the integumentary system and explain their functional roles in receiving, integrating, and conducting information.
11. Identify and describe the structural features of the skeletal system and explain their functional roles in osteogenesis and body movement.
12. Identify and describe the structural features of the muscular system and explain their functional roles in body movement, maintenance of posture, and heat production.
13. Identify selected muscles and their actions and bones and bone landmarks of the human body.
14. Describe the organization of the nervous system from both anatomical and functional perspectives.
15. Describe the gross and microscopic anatomy of nervous tissue.
16. Discuss neurophysiology, including mechanism of resting membrane potential, production of action potentials, and impulse transmission.
17. Discuss the division, origin, and function of component parts of the brain.
18. Describe the structure and function of the cranial nerves.
19. Describe the anatomy of the spinal cord and spinal nerves.
20. Discuss reflexes and their roles in nervous system function.
21. Explain the physiology of sensory and motor pathways in the brain and spinal cord.
22. List the functions of the autonomic nervous system.
23. Compare and contrast the somatic and autonomic nervous systems.

## **Student Requirements for Completion of Course and Due Dates**

The lecture is divided into four units. Test questions will be derived from lecture presentation and the textbook. All major exams will be given in the classroom on the announced date and are objective (matching, multiple choice, and modified multiple choice).

Extra credit- Extra credit testing will be done in the classroom. In the class period prior to a major unit exam, a 25 question test will be given. It will cover the same material that will be on the major unit exam. Six percent (6%) will be added to your raw score on the major unit exam with a minimum score of 64 on the extra credit test, no extra credit will be given for a score below 64. Ten of the 25 questions will be wordbits in the syllabus.

If you miss an extra credit test prior to the major unit exam, you must take it at the time of unit exam. Only two extra credit make-up tests are allowed.

## Assessment

Average of four lecture test=50% of total grade

Average of five lab practical test=40% of total grade

(If you have a different lab instructor, the number of practical tests may be different).

Comprehensive final=10%

Example for calculating your course average at end of semester:

Course average= .5(Lecture Test Avg) +.4(Lab Test Avg) + .1(Final Exam)

Example for estimating your course average during semester:

Estimated course average= .55(Lecture Test Avg) + .45(Lab Test Avg)

## Grading scale and class schedule.

Unit #1 Test Date \_\_\_\_\_ (Estimated end of 4<sup>th</sup> week) Score \_\_\_\_\_

Chapter 1- The Human Organism

Chapter 2- The Chemical Basis of Life

Chapter 3- Cell Biology and Genetics (Unit 2 includes some of Chapter 3)

Unit #2 Test Date \_\_\_\_\_ (Estimated end of 8<sup>th</sup> week) Score \_\_\_\_\_

Chapter 3- Cell Biology and Genetics

Chapter 4- Histology: The Study of Tissues

Chapter 5- Integumentary System

Chapter 6- Skeletal System: Bones and Bone Tissue

Chapter 7- Skeletal System: Gross Anatomy

Chapter 8- Articulations and Movement

Unit #3 Test Date \_\_\_\_\_ (Estimated end of 12<sup>th</sup> week) Score \_\_\_\_\_

Chapter 9- Muscular System: Histology and Physiology

Chapter 10- Muscular System: Gross Anatomy

Chapter 11- Functional Organization of Nervous Tissue

Chapter 12- Spinal Cord and Spinal Nerves

Unit #4 Test Date \_\_\_\_\_ (15<sup>th</sup> week) Score \_\_\_\_\_

Chapter 13- Brain and Cranial Nerves

Chapter 14- Integration of Nervous System Functions

Chapter 15- The Special Senses

Chapter 16- Autonomic Nervous System

Final Exam (16<sup>th</sup> week) Score \_\_\_\_\_

<b>Grading Scale</b>
90-100 A
80-89 B
66-79 C
55-65 D
54 or below F
Withdraw W

### **Attendance Policy**

I expect students to arrive for classes(lecture and lab) prior to the schedule class time. When a student's name is called for role and he/she is not present, they will be counted absent. It is the student's responsibility to come to me after class and change the absence to a tardy. Three tardies are allowed; thereafter, each tardy counts as an absence. When a student has three absences, I will remind them of their absences. A student will automatically be dropped on the fifth absence. Three lab absences count as 1 absence. A student must attend class: missing a classes for personal or schedule problems is an absent. **Last day to drop is April 19<sup>th</sup>.**

### **Make-up Policy**

If a student misses a lecture test, the first make-up will have the same format as the missed test and will be the same level of difficulty. I hesitate to allow a second make-up; however I will discuss it with you and in specific circumstances (personal illness, family illness, car accident, and etc.) I may allow a second make-up. A second make-up will be more difficult. A third make-up is not allowed. A make-up for lab or lecture must be taken after 7 calendar days from the date it is given.

One make-up for a missed lab practical is allowed. However, a legitimate reason must be given. Please try to avoid missing a practical.

### **Academic Integrity Statement**

Scholastic dishonesty, involving but not limited to cheating on a test, plagiarism, collusion, or falsification of records will make the student liable for disciplinary action after being investigated by the Dean of Students. Proven violations of this nature will result in the student being dropped from the class with an "F".

This policy applies campus wide, including TC Testing Center, as well as off-campus classroom or lab sites, including dual credit campuses. This information can be found in the Student Handbook at <https://texarkanacollege.edu>.

The following are examples of academic dishonesty

1. Copying from an answer sheet of another student when an exam is given.
2. Providing information to another student about a test if you have taken the exam. A person receiving information has an advantage over other students.
3. Cell phones must be concealed and cannot be retrieved during an exam; a few students are storing text and accessing it during the test. Cell phones cannot be answered and you cannot leave the classroom during an exam.
4. Sunglasses and baseball caps cannot be worn during an exam; however, you may reverse your cap so your eyes are not covered.
5. These policies apply in lab and lecture.

The instructor reserves the right to determine what constitutes an act of cheating, although the above are examples.

### **Disability Act Statement:**

Texarkana College complies with all provisions of the Americans with Disabilities Act and makes reasonable accommodations upon request. Please contact Larry Andrews at 903.823.3283, or go by the Recruitment, Advisement, and Retention Department located in the Administration building for personal assistance.

If you have an accommodation letter from their office indicating that you have a disability which requires academic accommodations, please present it to me so we can discuss the accommodations that you might need for this class. It is best to request these changes at the beginning if not before the start of class so there is ample time to make the accommodations.

### **Financial Aid**

Attention: Dropping this class may affect your funding in a negative way! You could owe money to the college/or federal government. Ccheck with Financial Aid Office before making a decision.

### **Cell Phones and Other Electronic Devices**

It is inappropriate for cell phones to ring in class or a student leaving class to answer a call. I consider it disrespectful to me as a teacher. Also, it is interrupting and distracting other students. Be certain that your phone is on vibrate while you are in the building.

Do not text in class.

It seems if students use their cell phones or other devices, their academic performance suffers.

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**Please have your students sign a statement stating they have read and understood the syllabus. This helps so much when students have complaints. Division Directors and Administration have a much easier time backing faculty members when student issues arise when syllabi are clear and students have signed that they understand what is in them.**

**Date** \_\_\_\_\_

**Name** \_\_\_\_\_





**Course Content:**

**1. BODY PLAN, ORGANIZATION, AND HOMEOSTASIS**

- Describe anatomical position.
- Name and describe body planes and sections.
- List body regions and body cavities.
- Use directional terms and basic terminology.
- Summarize the characteristics of life.
- List the levels of body organization.
- Name and describe the body systems and their primary functions.
- Describe the structure, function, and location of the four basic tissues of the body.
- Identify and describe the structural features of the integumentary system and explain their functional roles in receiving, integrating, and conducting information.
- Identify and describe the structural features of the skeletal system and explain their functional roles in osteogenesis and body movement.
- Identify and describe the structural features of the muscular system and explain their functional roles in body movement, maintenance of posture, and heat production.
- Identify selected muscles and their actions and bones and bone landmarks of the human body.
- Describe the organization of the nervous system from both anatomical and functional perspectives.
- Describe the gross and microscopic anatomy of nervous tissue.
- Discuss neurophysiology, including mechanism of resting membrane potential, production of action potentials, and impulse transmission.



- Explain how ions are formed and list those that are clinically most important as electrolytes.
- Provide an understanding of the amount of energy released when chemical bonds are broken.
- Contrast biochemical and inorganic compounds.
- Understand hydrolysis and synthesis of biochemical molecules and the products of each type reaction.
- Describe the structure and function of carbohydrates, lipids, proteins, and nucleic acids.
- Discuss the biological importance of water.
- Describe inorganic compounds and solutions.
- Explain the concepts of acids, bases, buffers, and pH .
- Explain energy transfer using ATP .
- Describe intracellular organization of the nucleus and cytoplasm.
- Describe membrane structure and function.
- Explain the mechanisms for movement of materials across cellular membranes.
- List and describe the structure and function of certain organelles.
- Discuss protein synthesis.
- Discuss cellular respiration.
- Describe the steps of somatic cell division (mitosis and cytokinesis).
- Explain how identical and fraternal twins are formed and account for the traits of each.
- Identify several genetic disorders and their occurrences.
- Describe and explain meiosis and relate the importance to sexual reproduction in humans.

### 3. HISTOLOGY

- Describe the microscopic anatomy, location, and functional roles of the basic tissue types, including epithelial, connective, muscular, and nervous.
- Describe glandular epithelium.
- Compare endocrine and exocrine glands.

- Describe the structure, function and location of membranes, including mucous, serous, cutaneous, and synovial.

#### 4. INTEGUMENTARY SYSTEM

- Note the general functions of the skin.
- Describe the gross and microscopic anatomy of the skin and accessory structures. Explain the roles of the specific tissue layers of the skin.
- Explain the roles of accessory structures.

#### 5. SKELETAL SYSTEM

- State the general functions of bone and the skeletal system.
- Describe the histology and structure of a typical long bone.
- Compare the histology, location, and function of compact and cancellous bone.
- Identify bones and their prominent markings.
- Explain the organization of the skeleton.
- Describe the structure and function of joints.
- Explain joint classification with examples.

#### 6. MUSCULAR SYSTEM

- List the general functions of muscle tissue.
- Compare and contrast skeletal, smooth, and cardiac muscle tissue with respect to structure, function, and location.
- Describe gross and microscopic anatomy of skeletal muscle in detail.
- Explain the physiology of skeletal muscle contraction.
- Discuss skeletal muscle metabolism.
- Explain principles and types of whole muscle contraction.
- Discuss nomenclature of skeletal muscles.
- Identify select muscles of the body and give actions.
- Describe group actions of skeletal muscles (prime movers, etc.).

#### 7. NERVOUS SYSTEM

- List the general functions of the nervous system.
- Describe the organization of the nervous system from both anatomical and functional perspectives.
- Describe the gross and microscopic anatomy of nervous tissue.

- Discuss neurophysiology, including mechanism of resting membrane potential, production of action potentials, and impulse transmission.
- Classify neurotransmitters and describe their roles in synaptic transmission.
- List and describe general sensory receptors and their roles.
- Discuss the division, origin, and function of component parts of the brain.
- Explain the protective roles of the cranial bones, meninges, and cerebrospinal fluid. Describe the structure and function of the cranial nerves.
- Describe the anatomy of the spinal cord and spinal nerves.
- Discuss reflexes and their roles in nervous system function.
- Explain the physiology of sensory and motor pathways in the brain and spinal cord.
- List the functions of the autonomic nervous system.
- Compare and contrast the somatic and autonomic nervous systems.

**Methods of Instruction / Course Format:**

The instructor may utilize the following strategies and techniques in the instructional delivery process:

- Lecture, discussion, and demonstrations
- Media presentations
- Text reading assignments
- Web assignments
- Pre-lab and post-lab discussions
- Laboratory dissection, demonstrations, and observation

**Assessment and Student Grade Assignment:**

The faculty may use the following in- or out-of class activities or criteria in evaluating student achievement of desired learning outcomes in the course and ultimately in the assignment of the semester grade.

- Written exams
- Lab tests and practicals
- Written lab reports and assignments
- Attendance and level of participation

Homework/internet/or library assignments  
Conferences  
Journals, notebooks, or portfolios  
Collaborative projects

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8. Collaborative projects

### **Course Grade:**

Students' final grades are determined by the following grading scale:

- |   |          |
|---|----------|
| A | 90 - 100 |
| B | 89 – 80  |
| C | 70 - 79  |
| D | 60 – 69  |
| F | 59<      |

## **Academic Dishonesty**

Texarkana College assumes that all students will involve themselves in honest pursuit of academic acquisition. When a student demonstrates academic dishonesty, disciplinary action will be initiated.

- A. Disciplinary proceedings may be initiated against a student accused of any form of academic dishonesty including, but not limited to the following:

"Scholastic dishonesty" includes, but is not limited to cheating on academic work, plagiarism, collusion, or falsification of records.

1. Cheating on academic work includes:
  - a. Copying another student's test paper in academic work;

- b. During a test, using materials that are not authorized by the test administrator;
    - c. Without permission, collaborating with another student during a test or in academic preparation;
    - d. Using, buying, selling, stealing, transporting, or soliciting the contents of an unadministered test.
  - 2. "Plagiarism" is defined as presentation for credit as one's own idea or product derived from an existing source.
  - 3. "Collusion" is defined as the unauthorized collaboration with another person in preparing written work for credit.
- B. Students found guilty of academic dishonesty in the classroom, off-campus site, or testing center will be dropped with an "F" from the course in which he/she is cheating. If one student is caught taking a test for another, both will be dropped from the course with an "F". **This policy will be strictly enforced and there will be no exceptions.**

## Anatomy and Physiology 1 Laboratory

### Cell Membranes and Osmolarity

Pre-lab discussion – An introduction to the plasma membrane uses a power-point presentation that illustrates key concepts regarding movement of materials across the membrane.

- Differential permeability of the membrane
- Concentration gradients
- Simple diffusion of substances across the membrane
- Osmosis
- Tonicity
  - solute, solvent, solution
  - isotonic, hypertonic, & hypotonic solutions
  - effects of solutions on red blood cells

Experimental procedure involves preparing slides that expose sheep's blood to these types of solutions, and microscopically observing the slides and recording/drawing the results. Based on the results of the experiment, students will determine the specific effects produced (no change, crenation, & hemolysis).

Post-lab discussion - After completion of activity, a follow-up power-point presentation reviews key concepts of activity.

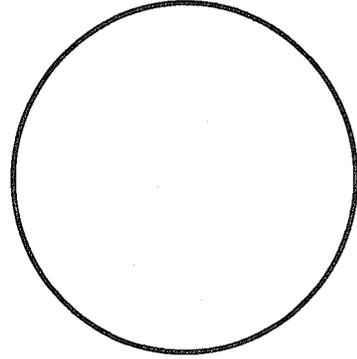
This laboratory addresses Teamwork as students will work with partners or groups to complete activity, written Communication is required to record observations and complete lab report, Empirical and Quantitative reasoning is required to predict effects of solutions of varying concentrations, and Critical Thinking is required to explain process responsible for the experimental results.

## Cell Membranes

1. Add one drop of sheep's blood to a slide.
2. Add three drops of 0.9% NaCl to the blood.
3. Wait and then add a cover slip.
4. Examine the blood at 400X.
5. Draw a representative cell.

Solution tonicity:

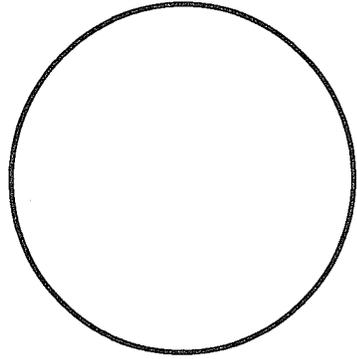
Cell tonicity:



6. Add one drop of sheep's blood to a slide.
7. Add three drops of 4% NaCl to the blood.
8. Wait and then add a cover slip.
9. Examine the blood at 400X.
10. Draw a representative cell.

Solution tonicity:

Cell tonicity:



11. Add one drop of sheep's blood to a slide.
12. Add three drops of dH<sub>2</sub>O to the blood.
13. Wait and then add a cover slip.
14. Examine the blood at 400X.
15. Draw a representative cell.

Solution tonicity:

Cell tonicity:

