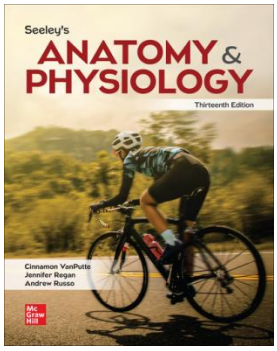
Division of Natural and Computational Sciences
Department of Biology
BIOL 2471 HUMAN ANATOMY AND PHYSIOLOGY I
College Mission

Texas College is a Historically Black College founded in 1894, by the Colored Methodist Episcopal Church, now the Christian Methodist Episcopal Church. The College shall prepare students with competencies in critical and creative thinking related to the knowledge, skills, and abilities as defined in areas of study. Additionally, the College shall provide an environment to inspire intellectual, spiritual, ethical, moral, and social development, which empowers graduates to engage in life-long learning, leadership, and service. (Restated October 26, 2023

Textbooks and or Electronic Site Required

VanPutte,C., Regan, J., Russo, A., and Seeley, R. (2022). ***Seeley's Anatomy and Physiology***, New York, New York: McGraw-Hill Publishers. 13th Edition. ISBN 9781264421138 (Rent)
ISBN 9781264421169 (Purchase)



Required Readings/Resources:

Readings

- T.Hotfiel, et al, ***"Nonoperative Treatment of Muscle Injuries,*** *Journal of Experimental Orthopedics,* 2018. https://jeo-esska.springeropen.com/articles/10.1186/s40634-018-0139-3
- Gardikis Konstantinos, "***Honey Extracts Exhibit Cytoprotective Properties against UVB-Induced Photo-damage in Human Experimental Skin Models",*** *HSOA Trends in Anatomy and Physiology,* 2020. Open at: https://www.heraldopenaccess.us/openaccess/honey-extracts-exhibit-cytoprotective-properties-against-uvb-induced-photo-damage-in-human-experimental-skin-models .

- Mark Hecimovich, Doug King, and Ida Marais, "*Player and Parent* ***Concussion Knowledge and Awareness in Youth in Australian Youth Football",*** *The Sport Journal, https://thesportjournal.org/article/player-and-parent-concussion-knowledge-and-awareness-in-youth-australian-rules-football/*
- G.LaBerge, E.Grasmick, ***"Recent Advances in studies of Skin Color and Cancer".*** *Yale J Biol Med,* 2020. *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7087065/*

Other Requirements:
Access to Computer or Laptop.

Course Description: For Human Anatomy and Physiology I:
This course is designed to serve as an introductory course to Human Anatomy & Physiology for Biology and Physical Education majors. The course emphasizes the importance of the cell, the structure and function of tissues, the structure and function of various organ systems and how the organ systems interact.. The course includes three lecture hours and two hours of laboratory per week.

Prerequisites: General Biology I (BIOL 1471) and General Biology II (BIOL 1472)

TEXAS COLLEGE OUTCOMES

1. Critical Thinking Skills
2. Communication Skills
3. Empirical and Quantitative Skills
4. Teamwork
5. Social Responsibility
6. Personal Responsibility

Furthermore, this course ensures the following institutional objectives:
1. Enhance communicative skills (oral and written)
2. Enhance critical thinking and technology skills.
3. Enhance leadership abilities and spiritual awareness.
4. Create opportunities for professional and pos-graduate pathways.

All learning objectives reflect the Texas College Core Values.

Academic Excellence: Developing a culture of curiosity and creativity that will challenge the frontiers of teaching/learning; stimulate research; raise the level of analytical reasoning and inquiry; and enable students to acquire leadership, human relations, communication, and technology skills.

Integrity: Instilling the pursuit of character, honesty, and sincerity of purpose as the moral rubrics upon which the behaviors of our graduates and College family are anchored.

Perseverance: Implanting diligence, enterprise, and pride in the application of skills, knowledge and abilities developed during the course of study at Texas College.

Social Responsibility: Promoting in the College community a conscious awareness that we are all stewards of the resources entrusted to our care.

Tolerance: Emphasizing openness to divergent points of view, applying an eclectic approach to rational and analytical thinking.

Community Service: Encouraging self-extension in service to others as the heart and soul of our educational enterprise.

STUDENT LEARNING OBJECTIVES & OUTCOMES

When you have completed your study in this course you should be proficient in meeting the following: objectives as described in the chart below. Note:
TENTATIVE SCHEDULE FOR FALL, 2024:

Week 1	Unit 1: Syllabus, Introduction, Course Requirements including School Policies.	Course Pretest *Emphasis on Course Requirements*	Total hours –4	SLO* 1; TC 1 & 2 *Student Learning Outcomes
THE INTEGUMENTARY SYSTEM-THE SKIN/CHAPTER 5				
Week 2	Unit 1: The Integumentary System Chapter 5	PowerPoint Lecture; Video; Homework assignments; Course Objective: *Identify parts of the Integumentary System including associative structures and describe their structure and function.*	Total hours--4	SLO 1; TC 1 & 2
Week 3	Unit 1: The Integumentary System Chapter 5	PowerPoint Lecture; Video; Homework assignments; Course Objective: *Explain how skin us used as Diagnostic Aid.*	Total hours - 4	SLO 1; TC 1 & 2
Week 4	Unit 1: The Integumentary System Chapter 5	PowerPoint Lecture; Homework assignments; Video; Course Objective: *Identify and Describe three types of skin cancer.*	Total hours - 4	SLO 2; TC 1 & 2
Week 4	Unit 1: The Integumentary System Chapter 5	PowerPoint Lecture; Homework assignments; Video; Course Objective: *Recognize age-related changes in the Integumentary System and explain the physiology behind these changes.*	Total hours - 4	SLO 2; TC 1 & 2

THE MUSCULAR SYSTEM-THE MUSCLES/CHAPTER 9				
Week 5	Unit 2: Histology and Physiology of Muscles	PowerPoint Lecture; Homework assignment; Video; Virtual Lab; Course Objective: *Compare muscular structure and function with the three types of muscle tissue.*	Total hours - 4	SLO 2; TC 1 & 2
Week 5	Unit 2: Histology and Physiology of Muscles	PowerPoint Lecture; Homework assignment; Video; Virtual Lab; Course Objective: *Describe the Sliding Filament Model of Muscle Contraction functions for the movement of Skeletal Muscle*	Total hours - 4	SLO 2; TC 1 & 2
Week 6	Unit 2: Histology and Physiology of Muscles	PowerPoint Lecture; Homework assignments; Video; Virtual Lab; Course Objective: *Describe muscle contraction and relaxation in response to an action potential in a motor neuron.*	Total hours - 4	SLO 3; TC 1, & 2
Week 7	Unit 2: Histology and Physiology of Muscles	PowerPoint Lecture; Homework assignments; Video; Course Objective: *Describe hypertrophy, atrophy and relate the to the effects of aging on Skeletal Muscle.*	Total hours - 4	SLO 3; TC 1, & 2
Week 8	Unit 2: Gross Anatomy and Functions of Skeletal Muscles	PowerPoint Lecture; Homework assignments; Chapter 8 Test; Course Objective: *Explain how the Origin, Action, and Insertion (OIA) of major skeletal muscles produce movement.*	Total hours - 4	SLO 4; TC 1, & 2
Week 9	Unit 2:	PowerPoint Lecture; Homework assignments; Video;	Total hours - 4	SLO 4; TC 1, & 2

	Gross Anatomy and Functions of Skeletal Muscles	Course Objective: *Describe the effects of Anabolic Steroids on the body with emphasis on the Skeletal Muscles.*		
THE NERVOUS SYSTEM-BRAIN, SPINAL CORD, AND NERVES/CHAPTER 11				
Week 10	Unit 3: Functional Organization of Nervous Tissue	PowerPoint Lecture; Video; Course Objective: *Describe structure, function, and linkage of neurons.*	Total hours - 4	SLO 5; TC 1, & 2
Week 11	Unit 3: Functional Organization of Nervous Tissue	PowerPoint Lecture Homework assignments Video Virtual Lab *Identify the events during Action and Resting Potentials.*	Total hours - 4	SLO 5; TC 1, & 2
Week 12	Unit 3: Central and Peripheral Nervous Systems	PowerPoint Lecture; Homework assignments; Video; Chapter 10 Test; Course Objective: Neuromuscular Case Study *Identify the structures of the Central and Peripheral Nervous Systems and compare the function of each system.*	Total hours - 4	SLO 6; TC 1 & 2
Week 13	Unit 3: Integration of Nervous System Functions	PowerPoint Lecture; Homework assignments; Video; Chapter 11 Test; Course Objective: *Explain the control of muscles on the parts of the Nervous System and how those movements change with aging.*	Total hours - 4	SLO 6; TC 1 & 2
Week 13	Unit 3: Autonomic Nervous System	PowerPoint Lecture; Homework assignments; Video; Course Objective: *Locate the pathway of the Central and Peripheral Nerves from the brain and spinal cord to the Sympathetic and*	Total hours - 4	SLO 7; TC 1 & 2

		Parasympathetic Nerves and describe the function of each.		
Week 14	Comprehensive Final Exam		Total hours - 4	TC 1, 2, 3, 4

Student Learning Outcomes: By the end of this course, the candidate will be able to

- i*dentify parts of the Integumentary System including associative structures and describe their structure and function.*
- e*xplain how skin us used as Diagnostic Aid.*
- identify *and Describe three types of skin cancer.*
- *recognize age-related changes in the Integumentary System and explain the physiology behind these changes.*
- *compare muscular structure and function with the three types of muscle tissue.*
- *describe the Sliding Filament Model of Muscle Contraction functions for the movement of Skeletal Muscle.*
- *describe muscle contraction and relaxation in response to an action potential in a motor neuron.*
- *describe hypertrophy, atrophy and relate the to the effects of aging on Skeletal Muscle.*
- *explain how the Origin, Action, and Insertion (OIA) of major skeletal muscles produce movement.*
- *describe the effects of Anabolic Steroids on the body with emphasis on the Skeletal Muscles.*
- *describe structure, function, and linkage of neurons.*
- *identify the events during Action and Resting Potentials.*
- *identify the structures of the Central and Peripheral Nervous Systems and compare the function of each system.*
- *explain the control of muscles on the parts of the Nervous System and how those movements change with aging.*
- *locate the pathway of the Central and Peripheral Nerves from the brain and spinal cord to the Sympathetic and Parasympathetic Nerves and describe the function of each.*

Instructional Strategies:

- Inclass Discussion
- Inclass and Virtual Presentations
- Relevant Research Information
- InClass Study of the Skin, Muscles, and Nervous System

Student Activities:

- Participation
- Essay Questions
- Internet Research
- Midterm and Final Exams
- Chapter Exams
- Laboratory Assignments

Method of Instruction:

- Web-based environment
- Class discussion to examine the topics on the course outline.
- Required readings and online activities.

- Use of online tools and resources to facilitate a deeper understanding of the readings and the class discussions.

Note: Designated time will be given to each student to discuss student progress. See your instructor for more information.

SOFTWARE AND SUPPLIES

Software and Programs:

1**. Access to websites** as referenced in class. *Students attempting to gain access through cell phones, Mac books, or outdated equipment may experience difficulties with certain websites or videos. It is the student's responsibility to locate a computer lab with viable equipment.*

2. **Access to JICS**. *It is the student's responsibility to become familiar with* JICS.

3. Documents in this course will be in **Word format. PowerPoints will also be used**.

4. *Students should be prepared to **back up files** on their own Flash Drive. Work should be saved more than once, as it is not the instructor's responsibility if technology issues suddenly occur and information is lost*.

COURSE REQUIREMENTS

SUBMISSION OF ASSIGNMENTS

All assignments must be submitted on time **in JICS. Submitting assignments through email is discouraged.** If **extenuating circumstances** prevent you from turning in an assignment, please contact the Instructor **before** the due date. Late work will be accepted without penalties **only if** emergencies are documented or Texas College is experiencing difficulties. Students are required to have access to internet that is JICS compatible.

Students are expected to submit assignments on the due date. If you submit an assignment late, you will receive 70% of the earned grade for the assignment. No excuses will be accepted, including difficulties with technology.

ATTENDANCE POLICY

The student is responsible for attending all lectures, seminars, laboratories, and field work for each registered class. A student will be permitted one unexcused absence per credit hour of the course by the instructor in which he/she is enrolled. Any student whose unexcused absences exceed the number permitted by the instructor may be vulnerable to failing the course. The administration endorses student participation in activities and exercises that represent the college to the external public. However, students are still responsible for the successful completion of coursework. Following are examples of excused absences and acceptable documentation considered by administration.

Excused Absences and the required documentation can be found on page 35 of the College Catalog. The Catalog can be found on the Texas College Website under the Office of Academic Affairs.
The student is responsible for attending all lectures, seminars, laboratories, and field work for each registered class—beginning with the first day of class scheduled—in order to verify registration with instructors and to complete all work assigned for the course. If a student does not attend class during the first week (first five instructional days) of the semester, or does not attend five consecutive class sessions, and does not give prior notification to the instructor of reasons for absence, and intent to attend the class, the student may be recommended to the Vice-President for Academic Affairs to be administratively withdrawn from the course. The instructor should read the rules governing class attendance and absences to each of the assigned classes at the beginning of each semester.

These attendance regulations will be strictly enforced.

The student will be held accountable for adhering to the College Attendance Policy. Instructors are not obligated to allow students to submit late assignments because of their absence unless the absences have been officially approved. An officially approved absence, however, gives the individual who missed the class an opportunity to turn in the assignment late but in no way excuses the student from the work required. Official excuses are granted by the vice president for student affairs for authorized College activities, verified personal illness, or illness or death in the student's immediate family. Students should understand that absences may jeopardize their grades. A student will be permitted one unexcused absence per credit hour of the course in which he/she is enrolled. Any student whose unexcused absences exceed the number permitted may, at the discretion of the instructor, be assigned a grade of "F" or be dismissed from the class.

Absences will count from the first official date of classes and not from the first day the student attends. It is the responsibility of the instructor to keep an accurate attendance record of all students enrolled. Students receiving veterans' benefits are required to attend classes according to the regulations of the Veterans Administration in addition to those regulations set by the College for all students.

EXCUSED ABSENCES AND ACCEPTABLE DOCUMENTATION: From page 35 of the College Catalog:

- **Personal illness or illness of immediate family member Physician's statement**
- **Death in immediate family Funeral program**
- **Patriotic duty** (military or jury duty; court appearance, etc.) Copy of notice or summons
- **Performance of co- or extra-curricular obligations** to the College (travel with athletic teams, class field trips, conferences, seminars, fine arts performance, etc.) Written statement from sponsor or notice from either the Office of Academic Affairs or Student Affairs College Assembly Attendance.

ACADEMIC HONESTY

Academic Integrity Policy:

Texas College believes that strength of character is as important as academic achievement, therefore, the College expects everyone in the academic community to maintain personal integrity in academic matters and not to contribute or condone the dishonesty of others. Scholastic dishonesty (which includes any form of **plagiarism, cheating, falsification of records, and collusion with others to defraud**) is improper and will not be tolerated. Texas College reserves the right to apply disciplinary actions to a student who has committed scholastic dishonesty. For further

information, see the ***Texas College Catalog found on the Texas College website (www.texascollege.edu) page 35, Item: Academic Integrity Policy.***

INSTRUCTIONAL METHOD

Texas College observes **remote synchronous instruction** defined as a two-way, real-time/live, virtual instruction between instructors and students when students are not on campus and observing COVID-19 distance requirements.

In this method, the required amount of instructional time related to courses will be scheduled each day, and communication is generated when attendance is recorded daily at a locally selected time utilizing school-purchased Software. Synchronous instruction is provided through a computer or other electronic device or over the phone. The instructional method will address the course and degree program requirements. If a student who is originally scheduled to receive instruction through the on-campus or synchronous instructional method is not present at the designated official course time, the student will be not be considered present for the day by engaging through the remote synchronous method.

In the remote synchronous instructional method, student engagement is measured daily, and attendance is assigned based on the student's completion of that day's course engagement measure. Students who do not complete the daily measure of engagement are to be counted absent for that day, and that absence cannot be changed to remote synchronous present if the student completes the engagement measure on a later date.

Attendance is measured as synchronous interaction for scheduled courses. Attendance depends on the **active participation of students whether virtual (synchronous) or in class (non-synchronous)**. Students are expected to attend online sessions just as students will do in a face-to-face means of instruction.. Appropriate lighting is encouraged for better engagement when the video feature of Zoom is in use.

PROGRAM FOR WHICH THE COURSE IS REQUIRED

Human Anatomy and Physiology I is a requirement for Biology Majors which leads to a Bachelor of Science (BS) Degree in Biology. It is also a requirement for Physical Education Majors.

METHOD OF STUDENT EVALUATION

Tests are typically composed of multiple choice, fill in the blank, short answer, and true/false questions aimed at using critical thinking. Examinations are 100 points each, except for the final examination which is 200 points.

Evaluation Components	**% of Grade**
Lecture	**75**
Classroom Assignments	
Chapter Examinations	
Midterm Examination	
Final Examination	
Quality Enhancement Plan (QEP) Assignment 1: To be announced.	
QEP Assignment 2: To be announced	
Laboratory	**25**

Total:

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Grading Rubric:

A = 90-100	Transformative (and submitted on time)
B = 80-89	Proficient
C = 70-79	Developing
D = 60-69	Beginning
Below 60	Not Submitted on time

***Grade of C or above is required to pass the course. The course must be repeated for Biology Majors if grade is a D or below.**

Course Assignments-Lecture and Laboratory: (Assignments and their Due Dates on Posted on JICS Coursework).

Example from Coursework:

Assignment	Due
Midterm Examination	Friday 3/3, Closed
Final Examination	Wednesday 5/3, Closed

Each student is expected to complete the assignments as specified under Coursework. There will be No exceptions.

ASSESSMENT

Performance based standards for each learning opportunity will be explained prior to each assignment. Students will work toward successful attainment of all standards. The assessment is designed to require use of high level thinking skills and to provide authentic opportunities for students to demonstrate an understanding of effective classroom management. Assessment of the course objectives may include but is not limited to methods such as simulation, debate, and research.

Quick-writes/Reflections: Each class will begin with a writing assignment related to your reading. At the end of each class, students will also write reflections based on what was learned.

Missed assignment cannot be made up past the due date. This is a measure of your attendance, and participation, as well as your thinking skills.

SPECIAL-NEEDS LEARNING

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of the Vice President for Academic Affairs at (903) 593-8311 x. 2335 for accommodations as early as possible in the term.

DRESS CODE

Classroom Attire: Students are expected to follow the College dress code. Students dressed inappropriately will be dismissed with an unexcused absence for the day.

- Female students are required to wear covering over the upper portions of their bodies.
- Low-cut blouses are prohibited.
- Back-out tops, blouses and t-shirts are prohibited.
- Micro-mini shorts that expose the buttocks are prohibited.
- Any dress, shirt, short, etc., that distracts from the teaching/learning process in the classroom is prohibited.
- Caps, head gear, durags are prohibited within the buildings.
- Male students are not permitted to wear shaggy pants.
- Male students are not permitted to wear sleeveless/muscle shirts in the classrooms or on campus.
- Male students are required to wear a belt with pants.
- Shoes are required in the classroom and cafeteria.
- No house shoes are permitted on campus.

DIVERSITY STATEMENT

Texas College is committed to creating a community that affirms and welcomes persons from diverse backgrounds and experiences and supports the realization of their human potential. We recognize that there are differences among groups of people and individuals based on ethnicity, race, socioeconomic status, gender, exceptionalities, language, religion, sexual orientation, and geographical area. All persons are encouraged to respect the individual differences of others.

Caveat:

In the event of extenuating circumstances, the schedule and requirements for this course may be modified.

TECHNOLOGICAL STATEMENT

This course is infused with technology in order to:

- Participate in Courses Synchronously
- To provide access for course information
- Use the Internet and electronic databases to conduct searches for research projects
- Create multimedia presentations to present class projects to teachers and peers
- PowerPoint Presentations

WRITING ACROSS THE CURRICULUM

Strong communication skills are critical for professionals. In an effort to maintain a commitment to developing effective writing skills for all students, all writing assignments will be evaluated for overall communicative competence. The following will be considered when grading written assignments:

- Word-processed (12 font), double-spaced, one inch left, right, top and bottom margins
- Content
- Clarity and Organization
- Source(s)
- Depth of thought/Originality
- Technology and Delivery
- Grammar and mechanics

RESOURCES

INTEGUMENTARY SYSTEM

*Review of the Integumentary System
https://www.youtube.com/watch?v=Orumw-PyNjw
2-2015

*Layers of the skin
https://www.youtube.com/watch?v=sd39mT047aU
5-2020

*Science of the Skin
https://www.youtube.com/watch?v=OxPlCkTKhzY
3-2018

*Structure and Functions of the Skin
https://www.youtube.com/watch?v=z5VnOS9Ke3g
3-2014

*Integumentary System Quiz
https://www.khanacademy.org/test-prep/mcat/organ-systems/integumentary-system/e/integumentary-system-questions
12-2020

MUSCULAR SYSTEM

*How your Muscular System works
https://www.youtube.com/watch?v=VVL-8zr2hk4

10-2017
*Cause of Muscle Fatigue
https://www.youtube.com/watch?v=rLsimrBoYXc
4-2019
*What Makes Muscles Grow?
https://www.youtube.com/watch?v=2tM1LFFxeKg
11-2015

NERVOUS SYSTEM
*Review of the Nervous System
https://www.youtube.com/watch?v=44B0ms3XPKU
3-2017
https://www.youtube.com/watch?v=6O-0CVAgaEM
7-2019
https://www.youtube.com/watch?v=qPix_X-9t7E
2-2015
*Motor Neurons and Nerve Cells (Neurons)
https://www.youtube.com/watch?v=SC2QFEUTQsg
12-2015
*The Nervous System and Action Potentials
https://www.youtube.com/watch?v=OZG8M_ldA1M
3-2015
https://www.youtube.com/watch?v=HYLyhXRp298
1-2017
*The Synapse and Actions of Neurons
https://www.youtube.com/watch?v=VitFvNvRIIY
3-2015
https://www.youtube.com/watch?v=HZh0A-lWSmY
1-2017
https://www.youtube.com/watch?v=OvVl8rOEncE
4-2017
*The Brain
https://www.youtube.com/watch?v=kMKc8nfPATI
3-2014
https://www.youtube.com/watch?v=vHrmiy4W9C0
2-2014
*How the Food You Eat Affects the Brain
https://www.youtube.com/watch?v=xyQY8a-ng6g
6-2016
*How to Take the Perfect Nap
https://www.youtube.com/watch?v=lLFP8GMIkFY
4-2022
*Dementia
https://www.youtube.com/watch?v=f0WCb23KPEw
11-2018
https://www.youtube.com/watch?v=2tcEgqTWbxQ
8-2011

BIOLOGY PROFESSIONAL ORGANIZATIONS/ASSOCIATIONS

Professional Associations are a great source of information about internships, career pathways, conferences, scholarships, opportunities to meet people in your field, and a whole host of career-related topics. Usually associations will provide a discounted membership rate for students enrolled in college. A few of these organizations include:

- American Academy of Forensic Sciences
- American Association for the Advancement of Science
- American Institute of Biological Sciences
- The American Physiological Society
- American Society for Biochemistry and Molecular Biology
- American Society of Crime Laboratory Directors
- American Society for Human Genetics
- American Society for Microbiology
- Association for Women in Science
- The International Association for Science, Technology and Society
- National Academy of Science

https://www.purdue.edu/science/careers/build_professional_profile/professional_orgs/bio_orgs.html

- American Association of Black Physicians

For Students who plan to graduate from Teacher Education:

Science 4-8

Domain I: Scientific Inquiry and Processes

Competency 001: The teacher understands how to manage learning activities to ensure the safety of all students.

Competency 002: The teacher understands the correct use of tools, materials, equipment, and technologies.

Science Standard I: The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.

Science Standard II: The science teacher understands the correct use of tools, materials, equipment, and technologies.

Domain III: Life Science

Competency 011: The teacher understands the structure and function of living things.

Science Standard I: The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.

Science Standard II: The science teacher understands the correct use of tools, materials, equipment, and technologies.

Science 7-12

Domain I: **Scientific Inquiry and Processes**

Competency 001: The teacher understands how to select and manage learning activities to ensure the safety of all students and the correct use and care of organisms, natural resources, materials, equipment and technologies.
Competency 003: The teacher understands the history of science, how science impacts the daily lives of students and how science interacts with and influences personal and social decisions.
Domain VI: Diversity of Life
Competency 030: The teacher understands that, at all levels of nature, living systems are found within other living systems with its own boundaries and limits.

Science Standard I: The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.
Science Standard II: The science teacher understands the correct use of tools, materials, equipment, and technologies.