

LAMAR STATE COLLEGE ORANGE SYLLABUS
Department of Science
Academic Division
BIOL 2402-32S Anatomy and Physiology II Lab
Summer 2 2026
Online

Instructor Name	Dr. Chad VanDevender
Building/Office Number	No physical office
Office Hours	See Office Hours Link on Class Page
Virtual Hours	See Office Hours Link on Class Page
Office Telephone	Email me
Email Address	chad.vandevender@lsc.edu or cvandevender@vidorisd.org

Syllabus Content:

The instructor reserves the right to make changes to this syllabus if deemed necessary. All changes will be provided to the students orally or in writing before the implementation of the change.

Student's Responsibility:

This syllabus contains information, policies, and procedures for a specific course. By enrolling, the student agrees to read, understand, and abide by the rules, policies, regulations, and ethical standards of Lamar State College Orange as those contained in the current LSCO Catalog and schedule of classes.

About this Course

Course Description:

Catalog: Continuation of the basic principles of human anatomy and physiology with emphasis on interrelationships among body systems, including the circulatory, lymphatic, immunological, respiratory, digestive, urinary, and reproductive systems.

General: BIOL 2402 is an introduction to the structural and functional relationships of the human body. This class will challenge the student to understand how the human body looks and works. BIOL 2402 will also improve the student's ability to use critical thinking skills by the engaging him/her in real-world problem solving using anatomical and physiological principles.

Pre-requisites/Co-requisites:

BIOL 2401 lecture and lab; Simultaneous enrollment in BIOL 2402 laboratory is required.

Required Textbook & Materials:

Marieb and Hoehn. 2014. **Anatomy and Physiology**. 7th. edition. Benjamin Cummings.

IF CHOOSING GATOR BOOK PACK OPTION, THE FOLLOWING APPLIES:

Upon registration for classes, LSCO students are automatically charged a standard amount per semester credit hour for access to all required textbooks, lab manuals, lab codes, and electronic books on the first day of class through the Gator Book Pack. Information about the LSCO Gator Book Pack, including the current cost as well as responses to common FAQs can be found on LSCO's [webpage](#). ALL STUDENTS WILL HAVE UNTIL THE SECOND DAY OF THE SEMESTER TO OPT-OUT OF THE GATOR BOOK PACK.

Expected Time Requirement for this Course:

For every hour in class (or unit of credit), students should expect to spend at least two to three hours per week studying and completing assignments. For a 3-credit-hour class, students should prepare to allocate approximately six to nine hours per week outside of class in a 16-week session OR approximately twelve to eighteen hours in an 8-week session. All Online/Hybrid students should expect to spend at least as much time in this course as you would in the traditional, face-to-face class.

Student Learning Outcomes:

Upon successful completion of this course, students will:

BIOL 2402 is an introduction to the structural and functional relationships of the human body.

This class will challenge the student to understand how the human body looks and works. BIOL 2402 will also improve the student's ability to use critical thinking skills by the engaging him/her in real-world problem solving using anatomical and physiological principles.

Program-Level Outcomes:

PLO1: Graduates of the program should possess a general knowledge base of natural sciences sufficient to score at or above the national average on a standardized test.

PLO2: Graduates of the program should be able to demonstrate science literacy by successfully reading, understanding, and interpreting science-based literature.

Critical Thinking Skills – Uses creative thinking, innovation, inquiry and analysis, evaluation and synthesis of information.

CLO 1: Critical Thinking Skills – Students will use creative thinking, innovation, inquiry and analysis, evaluation and synthesis of information as per ACGM for your specific course. Sample outcomes: Creatively identifies problem, argument, or issue (to determine extent of information needed); differentiates the facts from opinions as relates to situation; constructs possible solutions or prediction or consequences; uses logical, sound reasoning to justify conclusion.

Empirical and Quantitative Skills – Applies the manipulation and/or analysis of numerical data or observable facts resulting in informed conclusions.

CLO 2 Empirical and Quantitative Skills – Students will apply the manipulation and/or analysis of numerical data or observable facts resulting in informed conclusions as per ACGM for your specific course. Sample outcomes: Identifies mathematical or scientific principles needed to complete task; uses mathematical or scientific principles needed to complete task; analyzes how to use the principles; and applies problem-solving skills in mathematical or scientific principles needed to complete task with correct informed conclusions

Teamwork Skills- Shows the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

CLO 3 Teamwork Skills - Students will show the ability to consider different points of view and to work effectively with others to support a shared purpose or goal as per ACGM for your specific course. Sample outcomes: Helps the team move forward by discussing merits of alternative ideas; Treats team members respectfully; uses positive facial, vocal or written tone, or language to convey a positive attitude; Motivates teammates by expressing confidence about the importance of the task; Provides assistance/encouragement to team members; Completes all assigned tasks by deadline; Addresses conflict constructively; or helps the group avoid conflict completely

Module/Unit-level Outcomes: (CLO 1, CLO 2, CLO3)

Module 1 Understand and demonstrate the following material:

- Hematocrit, blood types and functions as they relate to homeostasis. Identify diseases that relate to blood disorders.
- Identify structures of the heart and the function as it relates to homeostasis. Identify the diseases that relate to the heart.

Module 2 Understand and demonstrate the following material:

- Identify the vascular structures as they relate to the heart. Identify and understand the pathologies associated with the cardiovascular system.
- Identify and understand the structures and the roles of the lymphatic system. Identify the pathologies associated with the lymphatic system.
- Identify the first, second and third line of defenses as well as the specific cells involved in the immune system. Identify difference between active and passive administration of antigens to enhance the immune system. Identify the pathologies associated with immunocompetent and immunocompromised persons.

Module 3 Understand and demonstrate the following material:

- Identify the structures and functions of the respiratory system. Understand the volumes of the pulmonary evaluation exams. Identify the pathologies associated with the pulmonary system.

-Identify the structures and the functions associated with the digestive system. Identify the pathologies associated with the digestive system.

Module 4 Understand and demonstrate the following material:

- Identify the structures and functions of the urinary system. Understand glomerular function. Identify the pathologies of the urinary system.
- Identify the structures of the reproductive system. Identify the homologous reproductive structures of males and females. Understand spermatogenesis and oogenesis. Identify the pathologies associated with reproductive system.

Course Activities

Signature Assignment Options: One or more of the following:

Pathology Research Paper: (CLO 1, CLO 2)

- The student completes a brief research paper on a self-selected topic using predetermined criteria and instructions.

General Education Outcomes:

Upon completion of the course the successful student will be able to demonstrate proficiency in the following competencies and mastery of the associated learning outcomes at a level consistent with the achievement and performance expected of college students:

Core Objectives	Associated Class Activities	Associated Measures
<i>Critical Thinking Skills:</i> Creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.	<i>Activities:</i> BIOL 2402 is an introduction to the structural and functional relationships of the human body. This class will challenge the student to understand how the human body looks and works. BIOL 2402 will also improve the student's ability to use critical thinking skills by the engaging him/her in real-world problem solving using anatomical and physiological principles.	<i>Measures:</i> Discussions, written exam questions and assignments
<i>Communication Skills:</i> Effective development, interpretation and expression	<i>Activities:</i> Written assessments, class discussion of course	<i>Measures:</i> Written exam questions and assignments.

Core Objectives	Associated Class Activities	Associated Measures
of ideas through written, oral and visual communication.	materials, and cooperative learning groups.	
<i>Empirical and Quantitative Skills:</i> Manipulation and analysis of numerical data or observable facts resulting in informed conclusions.	<i>Activities:</i> Written activities including case studies, short answer questions, and written assignments.	<i>Measures:</i> Case studies, short answer questions and laboratory assignments.
<i>Teamwork:</i> Ability to consider different points of view and to work effectively with others to support a shared purpose or goal.	<i>Activities:</i> Students will read, analyze, and interpret readings from the course text and other materials in laboratory or assigned lecture assignments	<i>Measures:</i> Discussion, assignments and exam questions.
<i>Social Responsibility:</i> Intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities.	<i>Activities:</i> Explore real life clinical applications using logical thinking, anatomical and physiological principles that concern personal and social responsibility. Students will assess consequences of lifestyle choices affecting global human health.	<i>Measures:</i> Studying the course materials; performance on written exams and assignments; attendance as measured by in-class assignments and/or activities.
<i>Personal Responsibility:</i> Ability to connect choices, actions, and consequences to ethical decision-making.	<i>Activities:</i> Students will attend class regularly, observe and conform to requirements of course policies and procedures, and will meet assignment boundaries and deadlines. Students will assess consequences of lifestyle choices affecting global human health. Develop habits of personal well-being	<i>Measures:</i> Studying the course materials; performance on written exams and assignments; attendance as measured by in-class assignments and/or activities.

Core Objectives	Associated Class Activities	Associated Measures
	as they learn about human biology and medical science.	

Class Schedule:

Students are expected to meet at all scheduled class times and submit assignments on listed dates and times. All deadlines will be discussed in class and/or posted on the class page. Exam dates will be determined as we finish material for each section of study. Final Exam date will be posted in the class page and throughout campus.

Credit Transfer:

BIOL 2402 is designated as an academic transfer course; state rules require that this course be transferable to any state institution, but program requirements and core curricula vary from school to school, so to be fully informed, transfer students should check in advance with the specific colleges to which they plan to transfer credit.

Grades

Evaluation Method:

Your final grade for BIO 2402 will be derived as follows: **The laboratory component of the course is a required co-requisite.** You must be simultaneously enrolled in both the lecture component (BIOL 2402) and the lab component (BIOL 2402). **Both components will receive the same letter grade**, from which the lecture (BIOL 2402) counts 75% and the lab (BIOL 2402) counts 25% toward the common grade. Both lecture and lab must be passed in order to receive a passing grade in either component.

75% Lecture grade

25% Laboratory grade

100% Final semester grade

Procedure for Review of Test Grades:

Example: If the student has an issue with his/her grade, the instructor must be contacted no later than three (3) days after receiving the grade.

Classroom Policy

Electronic communication

LSCO students are required to use either their LSCO Blackboard account or their LSCO email account (Office 365 / Microsoft Outlook) for all electronic communication. In order to ensure the privacy and identity of the student communicating via electronic methods, LSCO faculty will direct students to use their LSCO email accounts rather than personal accounts.

If a student has trouble accessing their LSCO email account, they should contact the LSCO Help Desk at (409) 882-3033 or helpdesk@lSCO.edu.

Logging in to Blackboard:

LSCO students will access Blackboard through the MyGator portal. Login credentials will use the following format: **NetID@my.lSCO.edu/Password**. For help in identifying your NetID/Password, visit <https://netid.lSCO.edu:8443/LamarWeb-1.0.0/UserRequest.jsp>.

It is a violation of College policy, state laws, and federal laws for anyone to gain or help others gain unauthorized access to MyGator or any LSCO application or service. All accounts shall be for use by a single individual – the person for whom the account was approved or assigned. This includes Blackboard accounts as well as any application within MyGator. Sharing or loaning accounts is strictly prohibited, can be construed as a form of cheating, and violates College policy, state laws, and federal laws.

Contingency Plans:

Students should develop a backup plan should their computer system or your Internet provider fail. Computer or internet connectivity issues are not valid excuses for missing a deadline. The College provides many opportunities for using computer equipment as do many public libraries.

Refer to the [LSCO website](#) for operational hours of the Library and Learning Center.

The instructor will respond to emails within 24 hours, excluding weekends and holidays. On weekends and holidays, the instructor will respond to emails from students within 24 hours of the first business day following the weekend or holiday.

Attendance:

Federal regulations require students who receive financial aid to have begun “attending” and participate substantially in each course for which they are enrolled on or before the official census reporting date outlined on the LSCO Academic Calendar. Students documented as “not attending” a course upon the census date are assumed (for financial aid purposes) to have not begun attendance for that course, negatively affecting their financial aid eligibility and disbursement.

Attendance in an **ONLINE** course is verified by substantial participation in the course on or before the census date published in the LSCO Academic Calendar. Substantial participation in this online course is defined as logging in and completing/participating in at least one requirement of the course. ***Note: Simply logging in to your online course does not constitute attendance.***

Hybrid classes are a mix of face-to-face and online environments. Students will be expected to attend a certain number of classes as required by the instructor. (Include the policy on absences and tardiness.) In addition to classroom attendance, your weekly active participation in the online component (Blackboard and/or homework software) will be considered and expected.

Instructor-Initiated Drop:

I **WILL NOT** drop or withdraw a student from this course who does not attend or participate in the course. It is, therefore, the **STUDENT'S** responsibility to request a drop to be processed. You will remain registered until you request a drop from your instructor. **ALL** drops must be initiated through a formal, written request from your instructor no later than the specified "DROP DATE" on the academic calendar.

Never attending or ceasing to attend classes DOES NOT constitute a withdrawal or drop. You remain registered until you file a Drop/Withdrawal Form at the Registrar's Office by the appropriate deadlines. Failure to act in a timely manner will result in an "F" grade for the course. It is the student's responsibility to turn in all Drop/Withdrawal Forms and follow up to ensure that they were processed as desired.

Participation: Weekly participation and engagement in the courses are critical for student success. Assignments should be completed by the due date. Students should also refer to the instructor's attendance policy for additional information. (See *LSCO Student Handbook, Class Attendance.*)

Make-up Policy:

If you miss a lecture, you are responsible for getting notes and handouts.

If you miss an in-class project, it cannot be made up.

If you miss an assigned out of class project, you must consult with one of your contacts for the information regarding the project.

Prearrangements: If you know that you must miss a scheduled exam, you must make arrangements with me beforehand. Arrangements **MUST** be made before the scheduled exam begins.

I DO NOT OFFER MAKE UP EXAMINATIONS. I will drop the lowest of your lecture examination grades to determine your examination average.

Exam Policy:

LSCO SCIENCE DEPARTMENT UTILIZES BIOSIG AS OUR PROCTORING SYSTEM. PLEASE READ AND FOLLOW THE SPECIFIC REQUIREMENTS AND PROCEDURES AS LISTED IN YOUR COURSE INFORMATION TAB.

Exams: There will be an exam at the end of each unit. The exams will cover material covered during lecture and from the text. **Exams will be Scantron, Paper, Testing Center or Internet.** Lecture exam questions tend to be true/false, matching, fill in the blank, multiple choice, short answer, and identification of structures. Unit exams will cover material from the current unit. However, as the course progresses the exams will become more comprehensive in nature with the use of appropriate terms, application of previously covered concepts, and addition of current information. I will not go over exams in class, and you will have the opportunity to

look the exams over after they have been graded. If you would like to further review your exam, please schedule a time during my office hours. I will not return exams or quizzes to you.

Final exam: The final exam is comprehensive. It may be scantron, paper, testing center or internet. **The Final is mandatory and cannot will be dropped per department policy**

Quizzes: Following any day's lecture, I reserve the right to quiz you over that material during the following class period. Generally, five to ten questions, true/false, short answer, or fill in the blank. These quizzes may be graded in class, or taken up and graded.

Signature Assignment: There will be a signature assignment designed to assess critical thinking and communication skills. Details will be discussed in class.

Classroom Etiquette:

Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program. Unacceptable or disruptive behavior will not be tolerated. Students engaging in unacceptable behavior may be instructed to leave the classroom. Inappropriate behavior may result in disciplinary action. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc.

(Online) Since face-to-face meetings in the classroom may be replaced by online meetings through discussion boards, emails, and/or Blackboard Collaborate, students are expected to follow the rules of netiquette in these forums.

(Hybrid) When face-to-face meetings in the classroom are replaced by online meetings through discussion boards, emails, and/or Blackboard Collaborate, students are expected to follow the rules of netiquette in these forums.

Campus Policy

Logging in to Blackboard:

LSCO students will access Blackboard through the MyGator portal. Login credentials will use the following format: ***NetID@my.lSCO.edu/Password***. For help in identifying your NetID/Password, visit <https://netid.lSCO.edu:8443/LamarWeb-1.0.0/UserRequest.jsp>.

It is a violation of College policy, state laws, and federal laws for anyone to gain or help others gain unauthorized access to MyGator or any LSCO application or service. All accounts shall be for use by a single individual – the person for whom the account was approved or assigned. This includes Blackboard accounts as well as any application within MyGator. Sharing or loaning accounts is strictly prohibited, can be construed as a form of cheating, and violates College policy, state laws, and federal laws.

Academic Honesty:

Faculty who suspect violation of academic honesty, cheating, plagiarism, collusion, or abuse of resource materials may assign an academic penalty. Students must be notified of their right to appeal before the academic penalty is imposed.

Students subject to penalty due to academic honesty have the right to appeal the decision. Refer to the current LSCO Catalog for details on the appeal process.

Civility:

Please be considerate of other classmates' feelings, ethnic background, cultural differences, situations, and level of maturity. Students will be asked to leave the course if disruptive or inappropriate behavior is exhibited in any of the course requirements. If your instructor feels that you have not contributed appropriately to course requirements, your final course grade may be reduced accordingly.

The instructor reserves the right to manage a positive learning environment and will not tolerate inappropriate conduct in the course. Rude correspondence (discourteous or impolite, especially in a deliberate way) in e-mails, telephone calls, in person, or comments made to other class members, the instructor, or the office staff.

Contingency Plans:

Students should develop a backup plan should their computer system or their Internet provider fail. Computer or internet connectivity issues are not valid excuses for missing a deadline. The College provides many opportunities for using computer equipment, as do many public libraries. Refer to the [LSCO website](#) for operational hours of the Library and Success Center.

Campus Closure:

In the event of an emergency campus closure in excess of three class days, Lamar State College Orange's classes will continue via the use of Blackboard. In such an instance, the college website, www.lSCO.edu, will have information concerning the event and anticipated re-opening plans.

Children in the Classroom:

It is inappropriate for minor children to be on campus due to the potential liability to the College, the risk of harm to the children, and decreased employee productivity due to distractions and disruptions.

Policies and Procedures:

LSCO adheres to the policies and procedures established in the *Texas Education Code*, *Texas State University System Rules and Regulations*, *LSCO Faculty Handbook*, *LSCO Student Handbook*, and *LSCO Catalog*.

Student Privacy:

The privacy of all students, including Distance Education students, is protected through strict adherence to the rules of the Family Education Rights and Privacy Act. LSCO's statement regarding the Family Education Rights and Privacy Act can be found in LSCO's [Student Handbook](#), page 70. Additional information regarding privacy for Distance Education students can be found in the [Distance Education Handbook](#), appendix D.

Drops and Withdrawals: The **LAST** day to drop or withdraw is **7/28/2026**. Please see all other important dates on the Academic Calendar posted on the LSCO website.

Never attending or ceasing to attend classes DOES NOT constitute a drop or withdrawal. You remain registered until you request a drop from the instructor. Failure to act in a timely manner will result in an "F" grade for the course. **It is the student's responsibility to follow up with the LSCO advising office to ensure that all drops/withdrawals are processed as desired.**

Instructor-Initiated Drop:

When absences, other than approved absences, interfere with the student's performance, the instructor may recommend to the division director that the student be dropped from the course. If this action is taken after the first weeks of the semester, a grade of "F" may be recorded for the course. In the case of an instructor-initiated drop, the advising office will be notified. In the event the student has accumulated 6 drops, and the drop is not eligible for an exemption to the rule, the instructor will not be able to drop the student. In this instance the student will have to receive the grade they have earned. (See *LSC-O Catalog, Academic Policies and Procedures, Six Drop Rule*)

Incomplete:

The grade of "I" may be given when any requirement of the course, including the final examination, is not completed. Students seeking an incomplete should have completed 75% of the course requirements and be passing the course at the time of the request. Arrangements to complete deficiencies in a course should be made in advance of the end of the semester with the instructor. The instructor will process the Incomplete form online, and a confirmation will be sent to the student's LSCO email.

Incomplete work must be finished during the next long semester. If not, the Office of Admission and Records must change the "I" grade to the grade of "F." The course must then be repeated if credit is desired. An "I" grade also automatically becomes an "F" if the student registers for the course prior to removing the deficiencies and receiving a grade change. The instructor may record the grade of "F" for a student who is absent from the final examination and is not passing the course.

Student Support

LSCO Library

Students are encouraged to visit library.lSCO.edu to find the library's current operating hours, access the catalog to locate print materials, and access GatorSearch to explore the vast electronic collection. The library provides over 77 electronic database collections that include eBooks, newspapers, magazines, academic journals, and streaming video. The physical library contains a specialized collection of research materials specifically chosen to support the degrees and courses offered. Additionally, Students with research questions or questions about library services are encouraged visit the library in person, call 409-882-3352, access the chat on the library webpage, or to email their question to lscolibrary@lSCO.edu.

Gator Success Center

Students are encouraged to make an appointment or walk in to receive tutoring, support services, or access to an open computer lab. Face-to-face and online supplemental instruction sessions are available to help students through any LSCO course. Reach out to learning.center@lSCO.edu for more information on how students can receive academic support.

Student with Disabilities:

Under the Texas State System, Lamar State College Orange complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for students with disability. We strive to provide reasonable academic adjustments/auxiliary aids to students who request and require them.

Students who believe they have a disability requiring an academic adjustment/auxiliary aid are encouraged to contact the Special Populations Advisor at (409) 882-3393 or visiting the Advising Office located on the first floor of the Ron Lewis Library Building (RLB) room 113. Students are encouraged to apply before the start of the semester when at all possible. The Accommodation Request Form and details regarding the appropriate documentation needed can be found here: <https://www.lSCO.edu/advising/disability.asp>. Once approved, the signed accommodation form provided by the Special Populations Advisor must be submitted to the instructor at least two business days in advance of need.

Advocacy Information:

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is encouraged to contact the advising office for guidance on how to identify possible resources. Please notify the instructor of your circumstance if you are comfortable doing so.

Affirmative Action:

LSCO is an affirmative action/equal opportunity institution which provides educational and employment opportunities on the basis of merit and without discrimination or harassment in full compliance with the Civil Rights Act of 1964, as amended; the Rehabilitation Act of 1973

(Section 503,504); Americans with Disabilities Act, as amended, Title IX of the Educational Amendments of 1972; the Vietnam Era Veterans Assistance Act of 1974; Article 5221k V.A.C.S.; and Executive Orders 11246 and 11758.

Title IX of the Education Amendments:

LSCO prohibits discrimination, including sexual harassment and retaliation, against any student on the basis of race, color, religion, gender, national origin, disability, or any other basis prohibited by law. Any student who believes that he or she has experienced prohibited conduct or believes that another student has experienced prohibited conduct should immediately report the alleged acts to the Title IX Coordinator, Patty Collins, at patty.collins@lsco.edu.

BIOL 2402/Summer 2 2026

LABORATORY SCHEDULE

<u>Week of</u>	<u>EXERCISE</u>	<u>Lab Packet</u>
7/8	Orientation, Intro to the Lab	
	Use of the Microscope	2,3
	Hematocrit	4
7/13	Blood cells and Differential Count	4-11
	Heart;	12-13, A
7/17	EXAM I	
7/20	Blood Vessels I	14-15, B, D
	Blood Vessels II;	16-17, C, D
7/24	EXAM II	
7/27	Eval. of the Cardiovascular Sys.	18-19
	Heart Sounds	18
	Pulse	18-19
	Blood Pressure	19-20
	EKG's	21-25
	Blood Typing	26-29
	Respiratory Sys	30-31, E
7/31	EXAM III	
8/3	Digestive Sys.	32-33, F
	Urinary Sys.	34-35, G
	Urinalysis	36-37
	Repro. Sys.;	34-35, H
8/7	EXAM IV	

Note:

Jul 13: Last day to drop without academic penalty

Jul 28: Last day to drop with academic penalty

We reserve the right to change lab schedule, or exam dates during the semester if needed. Advanced notice will be given if changes occur.