



## **BIOL 2301 (Anatomy & Physiology, Level 1) - Lecture**

**Credit:** 3 semester credit hours (3 hours of lecture)

**Prerequisite/Co-requisite:** Successful completion of required college entrance tests; must be enrolled in BIOL 2101 (lab) at the same time

### **Course Description:**

A study of the regions/planes of the body, cells, tissues, integumentary system, skeletal muscular and neurological systems of the body.

### **Recommended Text(s) and Materials:**

*Human Anatomy & Physiology* by Elaine Marieb, Pearson Publishing, 8<sup>th</sup> edition or most current edition. **ISBN-10: 0805395695**

*The Anatomy Assignment*, Level 1 edition 2, by Stephanie Lanoue. Kendall-Hunt Publishing, 2014. **ISBN: 9781465251015.**

### **Course Objectives**

Upon completion of the course, the student will be able to:

1. Use anatomical terminology to identify and describe locations of major organs of each system covered.
2. Explain interrelationships among molecular, cellular, tissue, and organ functions in each system.
3. Describe the interdependency and interactions of the systems.
4. Explain contributions of organs and systems to the maintenance of homeostasis.
5. Identify causes and effects of homeostatic imbalances.
6. Describe modern technology and tools used to study anatomy and physiology.

### **Core Objectives**

1. Critical Thinking Skills: To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
1. Communication Skills: To include effective development, interpretation and expression of ideas through written, oral, and visual communication
2. Empirical & Quantitative Skills: To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusion
3. Teamwork: To include the ability to connect choices, actions, and consequences to ethical decision-making
4. Personal Responsibility: To include ability to connect choices, actions and consequences to ethical decision-making

## Course Outline

### I. Human Body Intro

#### A. Homeostasis

1. Problem-solving scenario
2. Body system and examples

#### B. Regional and Descriptive Terms that describe the human body

1. Correct anatomical position
2. Practice and diagramming

#### C. Planes of the Body

1. Demonstration of planes using paper
2. Interpretation of x-ray, CT scans and MRI images

### II. Cells

#### A. Structures

1. Organelles within an animal cell
2. Features of the plasma membrane
3. Cytoskeleton components

#### B. Functions

1. Physiology of the organelles
2. Physiology of the plasma membrane
3. Physiology of the cytoskeleton components

#### C. Mitosis

1. Stages
2. Special terminology
3. Cancer – mitosis gone wrong

### III. Tissues

#### A. Main types of epithelial tissue

1. 3 basic types
2. Characteristics of each

#### B. Other tissues of the body

1. Pseudostratified
2. Stratified tissues

### IV. Integumentary System

#### A. Skin

1. Layers of the epidermis and specialized cells within those layers
2. Dermis and its components
3. Hypodermis

#### B. Appendages

1. Hair
2. Nails

### V. Bones and Skeletal System

#### A. Basic Shapes of Bones

1. How to classify bones

- 2. Practice activity
- B. Bone Markings
  - 1. 18 different bone markings
  - 2. Practice activity
  - 3. Location on skeleton

## VI. The Skeleton

- A. Bones of the axial skeleton
  - 1. Skull
  - 2. Ribs and vertebrae
  - 3. Pelvis
- B. Bones of the appendicular skeleton
  - 1. Arms, wrists and hands
  - 2. Legs, ankles and feet
- C. Joints
- D. Synovial joints
  - 1. Characteristics
  - 2. Synovial fluid
- E. Other joints
  - 1. Hinge
  - 2. Pivotal
  - 3. Saddle
  - 4. Ball-n-socket, etc.
- F. Movements of Joints
  - 1. Class demonstration
  - 2. Practice activity

## VII. Muscles and Muscle Tissue

- A. Introduction
  - 1. Physics behind muscle movement
  - 2. 3 basic types of muscle
- B. Characteristics of Muscle Tissue
  - 1. striations of skeletal muscle
  - 2. specialized branching of cardiac muscle
- C. Related muscle terms

## VIII. Muscular System

- A. Major muscles (anterior)
- B. Major muscles (posterior)

## IX. Fundamentals of the Nervous System

- A. Neurons
  - 1. Anatomy of the neuron
  - 2. Physiology of the neuron
- B. Neuroglia and supporting cells of the nervous system
  - 1. Einstein's brain versus most humans; latest research findings

2. 6 types of neuroglia and their locations and characteristics
- C. Central Nervous System
  1. Structures of the Brain
  2. All the parts of the brain, their locations
  3. Distinguishing characteristics
  4. Functions
  5. Physiology
  6. Hormones related to certain structures
- D. Peripheral Nervous System
  1. Structures
  2. cranial nerves
  3. thoracic nerves
  4. lumbar nerves
  5. Functions
  6. Physiology
  7. Reaction times/ reflex

**Grades/ Grading Scale** – simply add up all points from each assignment

- A = 900 – 1000 points  
B = 800 – 899 points  
C = 700 – 799 points  
D = 600 – 699 points  
F = 599 or below

Grades are calculated by **adding up** your points throughout the semester:

1. Four major exams (the best 3 exam grades are kept; lowest grade is dropped = total 600 pts or 60%)
  - Exam I = 200 pts      \*lowest major exam grade automatically dropped
  - Exam II = 200 pts      (if you are absent, that is your dropped grade for the
  - Exam III = 200 pts      semester); **No make-up exams**
  - Exam IV = 200 pts
2. Quizzes (4 are given; the best 3 grades are kept = total 150 pts or 15%)
  - Quiz 1 = 50 pts
  - Quiz 2 = 50 pts      \* lowest quiz grade automatically dropped (if you are
  - Quiz 3 = 50 pts      absent, that is your dropped quiz); **No make-up**

**quizzes**

  - Quiz 4 = 50 pts
3. One scientific commentary paper = 50 pts or 5% (**No late work accepted**)
4. Successful participation in a group research project/ presentation (COMMON ASSIGNMENT) = 200 pts or 20% (**No late work accepted**)

Total possible semester points = 1000 points

## Course Evaluation (Summary)

MRSA scientific commentary paper 5%

Exams	60%	
Quizzes	15%	
Group Presentation	20%	*Common Assignment

## Course Requirements (Summary)

Be prepared to complete:

- Reading and writing assignments (spiral workbook)
- Quizzes
- Research Group Presentation (Power Point) - *Assigned topics*
- Major Exams
- Watch videos and complete PowerPoint notes

## Course Policies

### General:

- Students must provide their own textbooks, writing instruments, and other necessary supplies for classes **including scantron answer sheets for exams and quizzes**
- Students are expected to read workbook chapters and watch all recorded class lectures on video (found at [lanoue.webstarts.com](http://lanoue.webstarts.com)) **prior to each class**
- No food or drinks will be allowed in the lecture classroom.
- Students must respect one another and all faculty. Disruptive behaviors like excessive talking off topic, surfing/texting on your cell phone not related to class participation will not be tolerated and the instructor reserves the right to ask you to leave the classroom.
- LIT has a policy that children are **not** to attend class with you for liability reasons.
- If you would like to ask a question or contribute during class, it is helpful to raise your hand prior to speaking.
- You are responsible for taking an active role in the learning process, being present in class, studying 6-9 hours per week for this course, having assignments 100% ready on time, keeping track of your own returned papers/grades, and participating during class activities. Please be on time!

### Attendance:

- Absences should be limited to serious illness and/or immediate family emergencies.
- Tardiness is highly discouraged. Excessive tardiness (more than 10 minutes/class for more than 3 consecutive classes) will result in an absence being awarded on the 4<sup>th</sup> tardy.
- In the event that LIT is forced to cancel classes due to inclement weather, notification of closures will be made through local radio and TV stations. Please do not contact me directly.
- Sign the roll sheet for every class. Do not sign for anyone else. **Perfect** attendance = + 10 bonus points for the semester. Perfect means perfect (not catching another class time or bringing a written excuse for being absent).
- The instructor reserves the right **not to administer an exam (or quiz) for any student more than 15 minutes late** to class.

### Policies associated with Assignments:

- All assignments are due when stated. Be ready (have things printed out and stapled and ready to turn in). **I do not accept email submissions** where I have to print out your assignments. It is your responsibility to already have everything printed out.
- **Assignments due are to be turned in during your class time (submitted at the same time with everyone else's assignments).**

**Policies associated with Examinations:**

- All exams will be on the dates specified unless the instructor makes a change.
- In case of an absence on exam day, the exam grade will automatically be a 'dropped' grade. However, only one exam grade may be dropped per semester. The same holds true for quizzes.
- Students are responsible for material in instructor Power Points, handouts and on videos found on the course website. Exam questions come from this material.
- There are no make-ups for either a missed test or a missed quiz. The lowest quiz test grade and the lowest quiz grade will be automatically dropped. You are permitted only 1 missed exam or 1 missed quiz per semester. Missing more than that may cause you to repeat the course.

**Academic Dishonesty**

Cheating and Plagiarism are two types of academic dishonesty. Cheating is taking an examination or test in a dishonest way, as by improper access to answers. Plagiarism is taking someone else's work and misrepresenting it as your own. Student's work should always be his/her own unless participating in a group project. Cheating and/or plagiarism will result in disciplinary action; i.e., zero on assignment/exam or an **F** in the course, expulsion, etc.

**Drop/Withdrawal:**

The student is responsible for initiating the drop/withdrawal process. Please refer to the LIT Catalog for the Institute policy on student or instructor initiated withdrawal.

**Students with Disabilities:**

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator, (409) 880-1737 or visit the office located in the Cecil Beeson Building.

**Course Calendar - (Tentative)**

**IMPORTANT! You are expected to complete all video lectures and associated PowerPoint notes BEFORE you come to EACH class! You are also expected to read your spiral workbook and answer the questions for each chapter weekly. During class, we will be busy with activities related to the video lectures and spiral workbook readings/associated questions. This course requires 6-9 hrs of prep/ study time per week minimum. Class participation 100% required.**

Week	Topic	Reference/Action Needed
1	Go over syllabus; Ch 1  NOTE: Omit Ch 2 Biochemistry. You are not responsible for completion of Ch 2 in your spiral workbook.	Resource: Class website <a href="http://Lanoue.webstarts.com">Lanoue.webstarts.com</a> & spiral workbook  Checklist: __ (1) Print out syllabus and place in personal notebook __ (2) Complete Ch 1 video lectures and fill in the PowerPoint templates for Ch 1 and place in notebook __ (3) Practice Regions of the Body (there is a blank copy under 'Practice Activities' link __ (4) Study for upcoming quiz __ (5) Get textbook if you have not already gotten it and read Ch 1 and complete all questions in chapter 1
2	<b>Quiz 1</b> – over Regions of the Body on scantron; Ch 3 (Cells)  <b>REMINDER: bring scantron for quiz</b>	Resource: Bring spiral workbook to class Checklist: __ (1) Bring scantron for quiz 1 Body Regions __ (2) Reminder: Complete Ch 3 videos and PowerPoint note templates from course website and print/place in 3-ring notebook __ (3) Read Ch 3 in spiral workbook and complete all questions in Ch 3
3	Ch 4 (Tissues)  This week: Go over Group Presentation Assignment. Assignment on website under “Assignments” link.	Resource: Bring spiral workbook to class Checklist: __ (1) Read Ch 4 in spiral workbook and complete all questions in Ch 4 __ (2) Complete Ch 4 videos and PowerPoint notes; print and place in your notebook __ (3) Prepare for upcoming Exam next week. Use Exam Review Guide under “Get Class Notes” and scroll underneath all PowerPoints to find “Final Exam Review Guide”. Complete Ch’s 1, 3-4.
4	<b>EXAM 1</b> – Exam over Ch 1, 3-4 on scantron; Begin Ch 5 next class (this week)	Bring spiral workbook to class Action Items: __ (1) scantron for exam

	<p><b>Reminder: Bring scantron to class for Exam</b></p> <p><b>Add'l REMINDER: Bring Spiral workbook to class with Ch 1 completed for +10 extra credit points. Spiral will be checked while you are taking EXAM 1.</b></p>	<p>__ (2) Complete videos and PowerPoints for Ch 5 and print for notebook</p> <p>__ (3) Read Ch 5 and complete all questions in spiral workbook</p> <p>__ (4) Work on paper due next week. Find the "Reading" (read article) and "writing" instructions under the "Assignments" link. Use writing instructions to write paper over what you read.</p>
5	<p>Complete Ch 5</p> <p><b>Papers Due first class meeting of this week - Be ready!</b> (NOTE: read scanned document from 'Assignments link' on course website; then read writing instructions which can be found there also); <b>Group Meeting #1</b> on Ms. Lanoue (during class time)</p>	<p>Bring spiral workbook to class</p> <p>Checklist: __ (1) Bring paper to class</p> <p>__ (2) Read Ch 6 in spiral workbook and complete questions</p> <p>__ (3) Complete Ch 6 videos and fill in PowerPoints &amp; print them out for your personal notebook</p> <p>__ (4) Practice bone markings</p>
6	Ch 6	<p>Bring spiral workbook to class</p> <p>Checklist:</p> <p>__ (1) complete everything for Ch 6 as stated from last week</p> <p>__ (2) Study for upcoming Bone marking quiz.</p> <p>Remember to watch additional youtube Bone Marking videos by Ms Lanoue and Dr Barron</p>
7	<p><b>Quiz 2</b> over Bone Markings (Ch 6) on scantron. Reminder: <b>Bring scantron.</b> Begin Ch 7, P 1.</p> <p>Next class (this week): <b>Group Meeting 2 on Ms. Lanoue</b> (class time during 2<sup>nd</sup> class day of this week) – bring laptops and resources to meet with your groups. Be present, prepared and cooperative! You are required to meet during class time. <b>NO EXCEPTIONS!</b></p>	<p>Bring spiral workbook to class</p> <p>Checklist:</p> <p>__ (1) bring scantron for quiz</p> <p>__ (2) Read Ch 7 in spiral workbook and complete questions</p> <p>__ (3) Watch Ch 7 videos and complete PowerPoints</p> <p>__ (4) study all bones</p> <p>__ (5) Use online Exam Review guide to prepare for upcoming test</p>
8	Ch 7 continued/ finish	<p>Bring spiral workbook</p> <p>Checklist:</p> <p>__ (1) Exam prep</p>



		Your exam reviews are online under "Get Class Notes" then scroll underneath at the Powerpoints to see a link called "Final Exam Review". Open it and study only the required chapters.
<b>9</b>	<b>EXAM 2 (Ch 5-7) on scantron</b> Reminder: <b>BRING SCANTRON for Exam 2</b>  Next class (this week), Ch 8 (this chapter is short and only 1 lecture in length)	Checklist: __ (1) Read Ch 8 in spiral and complete questions __ (2) Watch Ch 8 videos and complete PowerPoints
<b>10</b>	Ch 9 Muscles	Bring spiral workbook to class Checklist: __ (1) Read Ch 9 in spiral workbook and complete all questions __ (2) Watch Ch 9 videos and complete PowerPoints __ (3) prep for muscle quiz
<b>11</b>	Form study groups and go over muscles during first part of class (first 30-40 minutes). Then take <b>Quiz 3 – Muscles</b> (Ch 9) on scantron  Second class this week, <b>Group Meeting #3</b> (with your groups) on Ms. Lanoue during class time	Bring spiral workbook to class Checklist: __ (1) Prepare for Exam 3 next week (Ch 8-9) only; use online test review  __ (2) Bring materials and technology to Group Meetings
<b>12</b>	<b>EXAM 3 (Ch 8-9) on scantron</b>  Reminder: scantron for exam  Next class (this week) - <b>GROUP PRESENTATIONS BEGIN! Be Ready!</b> ----->	Checklist: __ (1) scantron for exam __ (2) Be ready to present your Group Presentations! Have this ready: one copy of your PowerPoint presentation, one meeting log, one self-eval point sheet already printed out and completed to give to Ms Lanoue before you start your presentation

<p><b>13</b></p>	<p><b>Mon/ Tues - Finish up Group Presentations</b></p> <p>Weds – “Catch Up Day” - begin viewing Ch 10 videos (using your own technology) and finish up Ch 10 in your spiral workbooks. You can do this from home or use the classroom to meet up with classmates.</p> <p>Thanksgiving <b>Holiday</b> (Thurs Nov 22) and (Fri Nov 23) – No Classes at LIT</p>	<p>Checklist:          __ (1) Read Ch 10 in spiral and complete all questions; <b>finish workbook</b> and bring it to your Final Exam for extra credit           __ (2) Watch Ch 10 videos and complete all PowerPoints</p>
<p><b>14</b></p>	<p>Ch 10, P1 Ch 10, P 2 and Ch 10, P3</p>	<p>Checklist:          __ (1)Finish up all Ch 10 videos!          __ (2)Finish up Ch 10 in workbook          __ (3)Prepare for Final Exam. Review on website under “Get Class Notes’ link and scroll down underneath all PowerPoints... says “Final Exam Review”</p>
<p><b>15</b></p>	<p>Monday/ Tuesday - Ch 10, P 4</p> <p>Weds/Thurs - <b>Last Class Day EXAM 4 (Final exam)</b> (Ch 10 and comprehensive from previous test questions). This Final Exam is 100 questions on scantron. All must be present and take this test – No Exceptions! Not taking the Final Exam can result in not completing the course.</p> <p><b>Completed spiral workbooks due this week at the Final Exam. They are checked while you are taking your Final Exam (and returned to you same day).</b></p>	<p>Checklist:          __ (1)continue reviewing for Final exam          __ (2)Bring scantron          __ (2)Bring Spiral Workbook (completed)</p>
<p><b>16</b></p>	<p>Finished with course. No additional attendance required this week.</p>	

**Contact Information** - Office MPC 402

**BIOL 2301**  
**Course Syllabus**

I prefer email to phone messages. Please email me at:  
[salanoue@lit.edu](mailto:salanoue@lit.edu) NOTE: Please **Do NOT** email me through Blackboard.

**Office Hours (for student consultation)** – updated each semester