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, skeletomuscular and neurological systems of the body.

Textbook:

*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 (linked to Common Assignment):

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

1. Empirical & Quantitative Skills: To include the manipulation and analysis of

numerical data or observable facts resulting in informed conclusion

1. Teamwork: To include the ability to connect choices, actions, and consequences to ethical decision-making
2. 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. Pseduostratified

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. Summary of how grades are

calculated is found in the “box”area immediately below. Grade scale:

A = 900 – 1000 points D = 600 – 699 points

B = 800 – 899 points F = 599 or below

C = 700 – 799 points

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| 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 300 pts (30%)  Exam I = 100 pts \*lowest major exam grade automatically dropped  Exam II = 100 pts (if you are absent, that is your dropped grade for the  Exam III = 100 pts semester); No make-up exams  Exam IV (Final Exam) = 100 pts. You may NOT exempt from the Final  Exam. Everyone MUST take it.   1. Quizzes (5 are given; the best 4 grades are recorded = total 200 pts (20%)   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  Quiz 5 = 50 pts   1. One scientific commentary paper = 100 pts (10%) No late work accepted. 2. One (solo) current event with 2-3 min presentation = 100 pts (10%) No late work accepted on this. 3. Successful participation in a group research project/ presentation (COMMON ASSIGNMENT) = 200 pts (20%) No late work accepted. 4. Daily work/ Participation Grade (completed workbook) = 100 pts (10%)   Total possible semester points = 1000 points |

Course Evaluation (Summary)

MRSA scientific commentary paper 10%

Major Exams 30%

Quizzes 20%

Daily Work/Participation (workbook) 10%  
Group Research & Presentation 20% \*also known as your Common Assignment

Solo Current Event with brief presentation 10%

Course Requirements (Summary)

Be prepared to complete:

Reading and writing assignments (spiral workbook; scientific paper)

Quizzes

Research Group Presentation (Power Point) - *topics* that are presented to the class

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/complete workbook chapters and watch all recorded class lectures on video (found at 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 4th 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 10 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)

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| IMPORTANT! Follow the weekly checklist to stay on track! (last column) |
| |  |  |  | | --- | --- | --- | | Week | Topic | Your Action Needed | | 1  8/26 – 8/30 | Mon & Tues - Syllabus  Weds & Thurs – Ch 1  Fri – finish Ch 1  NOTE: Omit Ch 2 Biochemistry. You are not responsible for completion of Ch 2 in your spiral workbook. | Resource: Class website  Lanoue.webstarts.com & spiral workbook  Checklist:  \_\_ (1) Secure a copy of syllabus & study it for next week’s Quiz 1 (over Syllabus)  \_\_(2) Complete Ch 1 video lectures  \_\_ (3) Place your PowerPoint templates for Ch 1 in a 3-ring notebook (from class website); we will complete notes during class  \_\_(4) Practice Regions of the Body (there is a blank copy under ‘Practice Activities’ link \_\_(5) Study for upcoming quizzes next week  \_\_(6) Get textbook if you have not already gotten it and read Ch 1 and complete all questions in chapter 1 (I will award +10 pts extra credit for completion of Ch 1 and will grade it during the first MAJOR EXAM. | | 2  9/2 – 9/6/2019 | *NOTE: Monday class you have a holiday.*  Tues 09/3 & Weds 09/04 Quiz 1 – over Syllabus on scantron; start Ch 3 (Cells) after quiz  Thurs 9/5 & Fri 9/6 classes Quiz 2 – Regions of the body on scantron; finish Ch 3 today  REMINDERS: bring scantron for Quiz 1 & 2 when you come to class this week and have your Power Point note templates printed out from the course website > Get Class Notes | Checklist:  \_\_(1) Bring scantrons for Quiz 1 (Syllabus Quiz) and Quiz 2 (Regions of the Body)  \_\_(2) Reminder: Complete Ch 3 videos  (3) Print PowerPoint note templates from course website and print/place in 3-ring notebook & bring to class (we will complete notes during class)  \_\_(3) Read Ch 3 in spiral workbook and complete all questions in Ch 3 | | 3  09/09 – 09/13/2019 | Mon & Tues – Start Ch 4 (Tissues)  Weds & Thurs – Finish Ch 4 and Go over “Current Event” assignment which is due next week (either Weds 9/18 or Thurs 9/19 depending on the day your class meets)  Friday class – finish up Ch 4/ discuss Current Event assignments | Resource: Bring Ch 4 note templates to class; we will fill them in during 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) Prepare for next week’s Current Event. Go to lanoue.webstarts.com > Assignments > Current Event | | 4  9/16 – 9/20/2019 | Mon & Tues EXAM 1 – Exam over Ch 1, 3-4 on scantron  Weds & Thurs - present Current Events (solo 2-3 min presentations (this week Weds and Thurs). Be ready! \*assignment found under “Assignments” link course website  Fri class – finish current events  Reminder: Bring scantron to class for Exam Mon/ Tues classes. Bring Spiral workbooks to class with Ch 1 completed for +10 extra credit points. Spiral will be checked while you are taking EXAM 1. Be ready! | Bring spiral workbook to class  Action Items:  \_\_(1) scantron for exam and completed Ch 1 spiral workbook for Mon/ Tues  \_\_(2) bring prop and current event for Weds/ Thurs classes  \_\_(3) Complete videos for Ch  5; print out Ch 5 note  templates  \_\_(4) Read Ch 5 and complete all questions in spiral workbook for next week | | 5  9/23 – 9/27/2019 | Mon & Tues classes – Start Ch 5 then go over upcoming assignments (Paper due in 1 week, plus Group project assignment/ draw topics and get into groups)  Weds 9/25 & Thurs 9/26 – Meet with your Groups during class time! Be sure you participate (bring research and ideas EVERYONE & sign meeting logs to prove your class attendance)  Fri 9/27 class – No Class Meeting/ Write your papers (due Monday 9/30) | Action items:  \_\_(1) 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.  \_\_(2) Go over Group project; get into groups (in prep for next week’s Group meetings) | | 6  9/30 – 10/4/2019 | Ch 5 / Start Ch 6 – all classes  Papers Due first class meeting of this week - Be ready! (NOTE: read scanned document from ‘Assignments link’ on course website; then read writing instructions which can be found there also) | Bring spiral workbook to class  Checklist:  \_\_(1) Bring paper to class  \_\_(2) Read Ch 6 in spiral workbook and complete questions for next week  \_\_(3) Complete Ch 6 videos & print Power points for class  \_\_(4) Practice bone markings by watching youtube videos  \_\_(5) find content ideas on google to bring to your first group meeting/ share your finding with your group and try to select your topic this wk. | | 7  10/7 – 10/11/2019 | Mon & Tues - Finish Ch 6 (Intro to Bones & Bone Markings)  Weds & Thurs - Quiz 2 over Bone Markings (Ch 6) on scantron. Reminder: Bring scantron.  Then, Begin Ch 7, P 1.  Fri class – Ch 7, P 1 continued/ finish | Bring spiral workbook to class  Checklist:  \_\_(1) complete everything for Ch 6 as stated from last week  \_\_(2) Study for upcoming Quiz 3 - Bone marking quiz.  Remember to watch additional youtube Bone Marking videos by Ms Lanoue and Dr Barron | | 8  10/14 – 10/18/2019 | Mon & Tues - Ch 7, P 2  Weds & Thurs – Ch 7, P 3  Fri – complete all content dealing with Bones. Study for Monday’s EXAM 2! | Bring spiral workbook to class  Checklist:  \_\_(1) bring scantron for quiz \_\_ (2) Read Ch 7 in spiral workbook and complete questions  \_\_(3) Watch Ch 7 videos and complete PowerPoints  \_\_(4) study all bones  \_\_(5) Use online Exam Review guide to prepare for upcoming test | | 9  10/21 – 10/25/2019 | Mon & Tues - EXAM 2 (Ch 5 – 7)  Weds & Thurs – Ch 9, P1 Muscles  Fri class – continue Muscles | Bring spiral workbook  Checklist:  \_\_(1) Exam prep/ use written review!  Your exam reviews are online under “Get Class Notes” then scroll underneath al the Powerpoints to see a link called “Final Exam Review”. Open it and study only the required chapters. | | 10  10/28 – 11/1/2019 | Mon & Tues - Ch 9, P2 Muscles  Weds 10/30& Thurs 10/31 - Group Meeting #2 on Ms. Lanoue– bring laptops and resources to meet with your groups. Be present, prepared and cooperative! Sign meeting logs! You are required to meet during class time. NO EXCEPTIONS!  Fri class – finish Ch 9 Muscles | Sign meeting log! | | 11  11/4 – 11/8/2019 | Mon & Tues – Ch 10, P 1 (\*this starts the material on the Final Exam, not Exam 3)  Weds & Thurs – form study groups and go over muscles during first part of class (first 20 – 30 minutes). Then take Quiz 4 – Muscles (Ch 9) on scantron. Start Ch, P2 notes.  Fri – “Study Day” for upcoming exam (no class meeting) | 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 | | 12  11/11 – 11/15/2019 | Mon & Tues – EXAM 3 (Ch 9 only)  Weds & Thurs – Quiz 5 over Ch 10. finish Ch 10, P 2 and Ch 9, P3.  Fri – finish Ch 10, P3 and start P4. | Bring spiral workbook to class  Checklist:  \_(1) Prepare for Exam 3 next week (Ch 9) only; use online test review  \_\_(2) Begin Ch 10 videos and workbook | | 13  11/18 – 11/22/2019 | Mon 11/18 & Tues 11/19 – Last Group Meetings on Ms. Lanoue (meet during class time and finalize everything). Presentations begin next class!  Weds 11/20 & Thurs 11/21 – GROUP’s PRESENT!!  FRI – continue presentations | \_(1) Bring materials and technology to Group  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 | | 14  11/25 – 11/29/2019 | Mon & Tues – finish ALL Group Presentations! All classes.  Weds – No class meeting. Finish watching Ch 10 videos (using your own technology)  Thurs & Friday – Holiday/ No Class  Happy Turkey Day! | Checklist:  \_\_(1) Watch Ch 10 videos  Checklist:  \_\_ (2) Finish up all Ch 10 videos!  \_\_(3)Finish up Ch 10 in workbook  \_\_ (4)Prepare for Final Exam. Review on website under “Get Class Notes’ link and scroll down underneath all PowerPoints… says “Final Exam Review” | | 15  12/2 – 12/5/2019 | Mon & Tues – Ch 10, P4  Weds & Thurs – EXAM 4 (Final Exam - Everyone Must take, No exceptions. Not taking the Final Exam can result in not completing the course.)  REMINDER: Bring completed workbooks (to be graded during class Weds & Thurs)  Friday – No Class (Last class day is Thursday 12/5) | Checklist:  \_\_(1) continue reviewing for Final exam  \_\_(2) Bring scantron  \_\_(2) Bring Spiral Workbook  (completed) | |

Contact Information - Office MPC 204D

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 (specifically for student consultation) – please let me know if you are stopping by

Mon/Weds 10:30am – 10:50am and 3:15-3:25pm

Tues/Thurs 10:30-10:50 am and 3:15-3:25pm

Friday – 10:45am – 11:05am