# Table of Contents

- Course Syllabus ......................................................................................................................... 2
- BIOL 2401 .................................................................................................................................... Error! Bookmark not defined.
- Semester, Year .............................................................................................................................. Error! Bookmark not defined.
- Instructor Information .................................................................................................................. 2
- Course Objectives ........................................................................................................................ 3
- Course Learning Outcomes ......................................................................................................... 3
- Course Outline (Calendar) .......................................................................................................... 5
- Evaluation Procedures ................................................................................................................. 5
- Exams and Assignments .............................................................................................................. 5
- Discipline/ Course/ Department/Policies ..................................................................................... 6
- Classroom policies ...................................................................................................................... 7
- Science learning center ............................................................................................................... 6
- Institutional policies .................................................................................................................... 8
- Academic dishonesty .................................................................................................................... 8
- Notification of absence due to religious holy day(s) ................................................................. 7
- Requirements of the americans with disabilities act ............................................................... 9
- Drop policy .................................................................................................................................. 9
- Administrative withdrawal ......................................................................................................... 10
- Financial aid statement .............................................................................................................. 8
- Stop before you drop .................................................................................................................. 8
- Counseling services ................................................................................................................... 11
- The academic skills center (acs) .............................................................................................. 11
- Exemplary educational objectives ............................................................................................. 11
- General educational outcomes .................................................................................................. 12
- Appendix A ................................................................................................................................. Error! Bookmark not defined.
- Lecture Outline: Book Chapters ............................................................................................... 16
- Laboratory Outline: Lab Book Chapters .................................................................................... 17
- What is expected of students? ..................................................................................................... 17
- Study Tips .................................................................................................................................... 17
- Ecampus ...................................................................................................................................... 18
Course Syllabus

BIOL 2401-76440
Summer II, 2017

Math, Natural Science & Sports Sciences Learning Center
Division Office: P-330
Phone: 972-273-3500
Hours: Vary by semester so check the posted hours.

This course syllabus is intended as a set of guidelines for Anatomy and Physiology. Both North Lake College and your instructor reserve the right to make modifications in content, schedule, and requirements as necessary to promote the best education possible within prevailing conditions affecting this course.

Instructor Information

Instructor: Lecture: Dr. Ticiano Alegre
Lab: Dr. Daniel Martinez
talegre@dcccd.edu
Office Phone: 972-273-3239 (best to email me)
Office: C336 (Main Campus)
Office hrs: By appointment

Course Information

Course title: Applied Human Anatomy and Physiology I
Course number: BIOL 2401
Credit hours: 4 Credit Hours
Course prerequisites: BIOL 1406.
Course description:
An applied systematic study of the structure and function of the human body designed for students considering a career in the health field. Includes anatomical terminology, cells, tissues, and the following systems: integumentary, skeletal, muscular, and nervous. Emphasis on homeostasis.
Look for your section Number:

<table>
<thead>
<tr>
<th>Section numbers</th>
<th>76440</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Meeting Time</td>
<td>INET</td>
</tr>
<tr>
<td>Lab Meeting Time</td>
<td>INET</td>
</tr>
</tbody>
</table>

Recommended Textbooks and Materials

https://he.kendallhunt.com/product/anatomy-physiology-all-coming-together

Lecture-Lab Required book

Course Objectives

I. Student must be able to identify the anatomy associated with each system and use appropriate vocabulary.
II. Student must be able to understand the physiology of each system and describe it with appropriate vocabulary.
III. Students must be able to integrate vocabulary, anatomy and physiology of the various systems.
IV. Students must demonstrate the ability to communicate their knowledge using appropriate vocabulary.
Course Learning Outcomes

1. Describe the organization of living matter as cells, tissues, organs, and organ systems.
2. The student will use the language of anatomy and physiology.
3. The student will discuss the development of the human body during embryogenesis.
4. Describe the basic requirements for sustaining life within the body.
5. The student will identify the basic types of tissue within the body, their locations, principal characteristics, and functions.
6. The student will describe the general features and functions of bones and the joints between them.
7. The student will name the bones of the body as well as major bone landmarks.
8. The student will discuss the contractile nature of muscle tissue and how muscles of the human body are constructed and controlled.
9. The student will describe the major movements made possible by different muscles and joints.
10. The student will name the major muscles of the body.
11. The student will discuss the structure and function of the basic parts of the nervous system (brain, spinal cord, and nerves) and their relation to the rest of the body.

The Course Learning Outcomes are addressed in more detail for each chapter in the Appendix A: More in depth Learning Objectives: These outcomes (objectives) will be assessed using methods of testing through departmental exams, in class group work, and assignments.
Course Outline (Class Schedule)

Please see e-campus for a complete and detailed Course Outline (Calendar). Pay careful attention to the listed dates.

Evaluation Procedures

Please read the: Start Here Button, Required Reading, and FAQ with in e-campus.

Lecture: Power Point, Blackboard, Projector, Exam Reviews and lecture exams.)
Laboratory Skills: Power Point, Blackboard, Reviews, and Hands On and lab. exams
End of Chapter power points questions: Exam review and practice.
Digital hands on: Great 3D illustration of full body anatomical views for digital hands on.

Exams and Assignments

- 5 exams (multiple choice) (drop lowest exam) -----------------------------50%
- 4 Laboratory Exams (drop lowest exam) ----------------------------- 40%
- Chapter review question-----------------------------------------------10%
- Required book exercises and also including: clinical cases, 3D anatomical illustration (for digital hands on), videos, and quizzes, all-inclusive in the book and app.

Grading Scale

Standard college grading is used to compute the final grade.

100-90    A
89-80      B
79-70      C
Below 70 No Certification in various programs
69-60      D
59 and Below     F

Online students take all lab and lecture exams at the testing center on the stated dates.  
On-campus students take all lecture exams at the testing center except the final exam (which is taken at the classroom). Also, all on-campus students take all lab exams at the lab where we meet weekly (not online).

For the computer exams at the testing center, you need to log on to e-Campus and click on the “Lecture or Lab Exams” button and select the exam. You may take the exam once the testing center has put in the password. All Exam scores will appear on e-campus immediately upon completion of the exam (except lab and the final lecture exam for On-campus students, these will be input by hand).

No exam can ever be repeated, reason why we drop the lowest lecture and lab grade. All lab and lecture are required to be taken.
Exams must be taken during the scheduled times!
If you need special accommodations you must submit a request to the Disability Services Office in person (A430) or by phone at 972-273-3165. Visit the North Lake College Disability Services, for more information.

Missed exam: For a missed exam with an excused absence at the due date, the exam must be taken as soon as possible, within 24 to a maximum of 48 hours after the exam’s deadline. Excused absences will only be offered for one of the following reasons: illness, death in family and a documented emergency. Please, do not ask for additional extra credit. We already (indirectly) have extra credit by dropping the lowest lecture and lab exams. To calculate your grade at any time you may wish to use: The Calculation your grade Rubric (located in your e-campus site).

The testing center will provide scratch paper and a copy of the periodic table. You must turn in these when you are finished with the exam. Do NOT take any testing materials with you when you finish the test. This includes the test, answers, charts, scratch paper, etc. To do so constitutes Academic Dishonesty. Do NOT open or use any other websites (beside the test provided) or other additional information during the test other than what is provided as that also constitutes Academic Dishonesty.

You should fill out the Test Request Form upon arrival at the testing center and you may want to bring a quarter for the coin return lockers. You may not bring personal items such as bags, cell phones or pagers into the testing area. You may not bring any children to the testing center.

Be sure to know the following information when you request your test:
- Instructor’s name
- Subject, course number, and section number (ex: BIOL-2401- 71436)
- Exam number (1st, 2nd, 3rd, etc.)

NLC Testing Center is located in A425. Be sure to arrive in plenty of time to take the exam. Be aware that exams are not given within one hour of closing. Do not wait until the end of the last day as you may not get in due to large numbers of students taking exams and there are no extensions of the deadlines due to over crowding or schedule conflicts. Be sure to check the hours of the testing center particularly if there are changes due to holiday hours. For more information about the Testing Center go to North Lake College Testing Center

Important: Government- or school-issued photo identification is required & enforced.
- You may not bring personal items into the Test Center. This includes bags, cell phones and pagers. Coin-reimbursable (quarter) lockers are available for student use. Please do not share lockers.
- Please show courteous and cooperative behavior while using the services provided by the Testing Center.
• Do not bring children to the testing center. You must make arrangements for the
care of your children prior to your exam date. The police department will be notified
of any unattended children.

• Do not take any testing materials with you when you leave the Testing Center. This
includes the test, answers, charts, scratch paper. These items will be attached to your
test.

Discipline/ Course/ Department/Policies

CLASSROOM POLICIES
• Attendance in all class lectures and labs are mandatory and roll will be taken daily. Please
arrive on time every day so as not to disturb the class with a late arrival. You are
encouraged to ask questions and to participate in class discussions. You are expected to be
an active learner and not a passive one. Students should be aware of the fact that they are
responsible for all material provided and all announcements made during their
absence regardless of the reason(s) of the absence.
• Excused absences will only be offered for one of the following reasons: illness, death in
family, official University business, or documented emergency. For any excused absence
written documentation is required. To obtain an excused absence, email me or call me at
972-273-3236 by the next class period. Documentation should be brought to the next class
meeting.

• No cell phones or beeping devices allowed.
• Distractive talking or any disorderly conduct is prohibited. Please be courteous of others.
• Taping of lectures is not allowed unless permission is obtained from the instructor.
• Follow the Code of Student Conduct for model behavior.
• You ultimately earn your grade.
• Students are encouraged to go to the Science Learning Center

SCIENCE LEARNING CENTER
The Science Learning Center (P333) provides free tutorial services for North Lake science
students. The center features tutors, software, videos, CDROM’s, internet, Anatomical
models, places to study quietly, places for group work, and other materials to assist in
science classes. In order to access resources of the center a North Lake College ID Card is
required. The subject specific schedule of tutors is updated every semester and is located at
the front of the center, just ask a tutor. For more information call 972-273-3273 or go to
North Lake College Tutorial Services
Institutional Policies

ACADEMIC DISHONESTY
The Student Code of Conduct prohibits academic dishonesty and prescribes penalties for violations. According to this code, which is printed in the college catalog, "academic dishonesty", includes (but is not limited to) cheating, fabrication, facilitating academic dishonesty, plagiarism, and collusion.

1) The Vice-President of Academic & Student Affairs may initiate disciplinary proceedings against a student accused of academic dishonesty.

2) Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism and collusion.

3) Cheating on a test includes:
   a) Copying from another student’s test paper;
   b) Using, during a test, materials not authorized by the person giving the test; Another example: Opening a website (no matter which one) apart from the test been provided.
   c) Collaborating with another student during a test without permission to do so.
   d) Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of an un-administered test.
   e) Substituting for another student, or permitting another student to substitute for you to take a test; and
   f) Bribing another person to obtain an un-administered test or information about an un-administered test.

4) “Plagiarism” means the appropriation of another’s work (ideas and/or words) and the unacknowledged incorporation of that work in one’s written work offered for credit. Quotes not identified as quotes constitute a form of plagiarism even if the borrowed ideas are documented.

5) “Collusion” means an unauthorized collaboration with another person in preparing written work offered for credit.
Academic dishonesty may result in the following sanctions, including, but not limited to:

1. A grade of zero on the Exam at hand (not able to drop this grade as your lower grade).
2. A reprimand.
3. Suspension from the college.

NOTIFICATION OF ABSENCE DUE TO RELIGIOUS HOLY DAY(S)
Students who will be absent from class for the observance of a religious holiday must notify the instructor in advance. Please refer to the Student Obligations section of the college catalog for more explanation. You are required to complete any assignments or take any examinations missed as a result of the absence within the time frame specified by your instructor.

REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT
North Lake College provides academic accommodations to students with disabilities, as defined under ADA law. It is the student's choice and responsibility to initiate any request for accommodations. If you are a student with a disability who requires such ADA accommodations, please contact North Lake College's Disability Services Office in person (A430) or by phone at 972-273-3165. View more information by going to North Lake College Disability Services.

If you are a student with a disability and/or special needs, or if you think you may have a disability, please contact the college Disability Services Office (DSO). Please note that all communication with DSO is confidential. If you are eligible for accommodations, please provide or request that the DSO send your accommodation letter to me as soon as possible (students are encouraged to contact DSO at the beginning of the semester). For more information regarding the College Disability Services Office, please visit the Student Services website: dcccd.edu/DSO Offices or contact DCCCD Office of Institutional Equity at (214) 378-1633.

A Note on Harassment, Discrimination and Sexual Misconduct
We are committed to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX and DCCCD policy prohibit harassment, discrimination and sexual misconduct. If you encounter harassment, sexual misconduct (sexual harassment, sexual assault, stalking, relationship violence, stalking), retaliation or discrimination based on race, color, religion, age, national origin, disability, sex, sexual orientation, gender identity, and/or gender expression, please contact your College Title IX Coordinator or the Office of Institutional Equity. We treat this information with the greatest degree of confidentiality possible while also ensuring student welfare and college safety. We are concerned about the well-being and development of our students, and are available to discuss any concerns. There are both confidential and non-confidential resources and reporting options available to you. If students wish to keep the information confidential, please contact the college Counseling or Student Health Services. As required by DCCCD policy, incidents of discrimination and/or sexual misconduct shared with faculty will be reported to the College Title IX Coordinator or District Title IX Coordinator. The Title IX Coordinator will contact the student and determine if further investigation is needed. For more information about policies, resources or reporting options, please contact your college Title IX Coordinator or visit www.dcccd.edu/titleIX.

North Lake College Title IX Coordinator: Rosemary Meredith(acting), TitleIX-NLC@dcccd.edu, 972 860 3992
The **Office of Institutional Equity**, in coordination with DCCCD colleges, has the primary responsibility for reviewing, updating and implementing compliance policies and procedures. The Institutional Equity and Compliance Officer and the Office of Institutional Equity will ensure compliance with College District policies, federal and state laws related to sexual assault, Title IX, Title II (Americans with Disabilities Act) and the Military Veterans Full Employment Act to support diversity and inclusion.

**DROP POLICY**

If you are unable to complete this course, you must officially withdraw by the date stated on the academic calendar. Withdrawing is a formal procedure which you must initiate; your instructor cannot do it for you. **There are important additional factors which are affected by withdrawals.** See the categories below for additional information. It is strongly encouraged that a student speaks with the instructor before withdrawing. If a student stops attending class and does not officially withdraw, that student will receive a performance grade based on work completed and missed. For more details concerning withdrawals go online to **Dropping or Withdrawing from Classes**.

All Dallas County Community Colleges charge a higher tuition rate to students registering the third time for a course. This rule applies to the majority of credit and Continuing Education / Workforce Training courses. Developmental Studies and some other courses are not charged a higher tuition rate. Third attempts include courses taken at any DCCCD college since the fall 2002 semester. For further information, go online to **Third Attempt at DCCCD**.

**ADMINISTRATIVE WITHDRAWAL**

Students with valid extenuating circumstances may be eligible for an administrative withdrawal by the Dean of the Division in which the course or courses are taught. An administrative withdrawal will not be awarded to students who simply fail to withdraw prior to the last day to receive a “W.” The request for an administrative withdrawal must be made in writing to the Dean of the Division with any supporting documentation attached. This must occur before the last official day of the semester.

**FINANCIAL AID STATEMENT**

Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate are also subject to this policy.

To apply for financial aid in the DCCCD, students must complete FAFSA (Free Application for Federal Student Aid) on the web at **FAFSA**.

Financial Aid Certification of Attendance: You must attend and participate in your on-campus or online course(s) in order to receive federal financial aid. Your instructor is required by law to validate your attendance in your on-campus or online course in order for you to receive financial aid. You must participate in an academic related activity pertaining to the course such as but not limited to the following examples:

- Initiating contact with your instructor to ask a question about the academic subject studied in the course;
- submitting an academic assignment; taking an exam; completing an
In an online class, simply logging in is not sufficient by itself to demonstrate academic attendance. You must demonstrate that you are participating in your online class and are engaged in an academically related activity such as in the examples described above.

**STOP BEFORE YOU DROP**

For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access: [eConnect Facts About Dropping Classes](#)

**COUNSELING SERVICES**

Counseling services for personal issues are provided to all students currently enrolled at North Lake College. These services are provided by licensed professionals who are bound by confidentiality (within ethical parameters) at no charge. With the assistance of a counselor, students are able to identify, understand, resolve issues and develop appropriate skills. To make an appointment, call 972-273-3333 or visit A 430.

**THE ACADEMIC SKILLS CENTER (ACS)**

The ASC is designed to provide assistance to students in the following areas:

- Labs for students enrolled in foreign language, Developmental Reading, and ESOL courses. One-on-one tutoring is available.
- The Writing Center can help students clarify writing tasks, understand instructors’ requirements, develop and organize papers, explore revision options, detect grammar and punctuation errors, and properly use and document sources. Rather than merely editing or "fixing" papers, tutors focus on helping students develop and improve their writing skills.
- The Online Writing Lab (OWL) allows students to submit papers to our writing tutors electronically and get feedback within 24-72 hours. The OWL can be accessed through eCampus. After logging on to eCampus, click on the Community Tab at the top. Type “Owl” in the search field and click “Go.” Next, click on the double drop-down arrows next to “NLC-OWL2,” and then click on “Enroll.” Once enrolled, students can receive services from the OWL. For more information or to schedule a tutoring appointment, come by A-332 or call 972-273-3089

**Exemplary Educational Objectives**

The objective of the study of a natural sciences component of the core curriculum is to enable the student to understand, construct and evaluate relationships in the natural sciences and to enable the student to understand the bases for building and testing theories. This course satisfies all of the Exemplary Educational Objectives. **The exemplary educational objectives are:**
1. To understand and apply appropriate methods and modern technology to the study of natural sciences. A web based program, McGraw Hill Connect, will be used to assist the learning process.

2. To recognize scientific and quantitative methods and the differences between these approaches and the other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.

3. To identify and recognize the differences between competing scientific theories.

4. To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.

5. To demonstrate knowledge of the interdependence of science and technology and their influence on and contribution to, modern culture.

Core Curriculum Intellectual Competencies

As part of the core, this course contributes to the development of 6 basic intellectual competencies—reading, writing, speaking, listening, critical thinking, and computer literacy. These Core Curriculum Intellectual Competencies are essential to the learning process in any discipline and are defined by the Texas Higher Education Coordinating Board.

This course reinforces 3 of the 6 Core Curriculum Intellectual Competencies defined by the Texas Higher Education Coordinating Board. The CCI’s identified by the DCCCD which are reinforced are as follows:

1. **READING**: Reading at the college level means the ability to analyze and interpret a variety of printed materials—books, articles, and documents. A core curriculum should offer students the opportunity to master both general methods of analyzing printed materials and specific methods for analyzing the subject matter of individual disciplines.

4. **LISTENING**: Listening at the college level means the ability to analyze and interpret various forms of spoken communication.

5. **CRITICAL THINKING**: Critical thinking embraces methods of applying both qualitative and quantitative skills analytically and creatively to subject matter in order to evaluate arguments and to construct alternative strategies. Problem solving is one of the applications of critical thinking, used to address an identified task.

General Educational Outcomes

Gen Ed Outcome I: Communication Skills
1. Writing: Process and produce effective written communication adapted to audience, purpose, and time constraints.
2. Speaking: Produce effective oral communication adapted to audience, purpose, and time constraints.
3. Listening: Comprehend, and analyze oral information.

Gen Ed Outcome II: Critical Thinking Skills
1. Accurately summarize and evaluate information for elements such as facts, opinions, inferences, presumptions, bias, viewpoints, and arguments presented orally or in writing.
2. Solve problems by constructing, testing, and defending well-reasoned conclusions by applying relevant criteria.
Gen Ed Outcome III: Information Literacy and Technological Competency
1. Effectively access, evaluate, synthesize and communicate information using a variety of sources, including print and electronic.
2. Select and use appropriate technology.

Gen Ed Outcome IV: Ethical and Civic Values
1. Display integrity, honesty, and fairness.
2. Use ethical reasoning to analyze moral issues and articulate the consequences of various actions.

Gen Ed Outcome V: Cultural Diversity and Global Awareness.
1. Demonstrate understanding of cultural diversity and such influences as history, politics, humanities, technology and science on global societies.
2. Recognize assumptions and biases that shape our perceptions.

Gen Ed Outcome VI: Workforce and Interpersonal Skills
1. Collaborate effectively and reliably as part of a team.
2. Apply efficient time and task management.

APPENDIX A: More in depth Learning Objectives:
The Skeletal & Muscular Systems

Bones & Skeletal Tissues

1. Understand the general functions of the skeletal system.
2. Describe the functional properties of each of the three types of cartilage tissue and locate the major cartilages of the adult skeleton.
3. Define the four types of bones based on shape and be prepared to give examples of each. *
4. Describe the structure of long bones as well as the histology of compact bone.*
5. Describe the chemical composition of bone and the types of cells found here.
6. Compare and contrast intramembranous and endochondral ossification.
7. Name and describe the two types of growth which occurs in long bones.
8. Describe bone formation and reabsorption as homeostatic mechanisms for balancing plasma Calcium ion concentrations
9. Identify the bones, markings, sutures, sinuses and fontanels as assigned in lecture and lab. *
10. Identify the subdivisions of the spinal column and distinguish between primary and secondary curvatures. *
11. Identify the three major structural categories and the three functional types of skeletal joints.
12. Understand the structure of synovial joints.
13. Recognize the types of movements which occur at synovial joints.
14. Describe the general functions of the muscular system.
15. Be familiar with the three types of muscle tissues. Know the function, histology and location of each. *
16. Explain the structure of an entire skeletal muscle from the level of subcellular structures to the whole muscle.
17. Describe the physiology of contraction in skeletal muscle at the fiber (cellular) level. Understand the role of acetylcholine and acetylcholinesterase.
18. Explain the significance of the “motor unit” and of the “all or none” principle.
19. Be familiar with the characteristics of contractions resulting from differing strengths and frequencies of stimuli. (Words to know: Simple twitch, summation, incomplete and complete tetany, treppe, and tonus)
20. Describe the metabolic aspects of energy mechanisms which support muscle contraction. (glycolysis, Kreb’s cycle, and electron transport)
21. Contrast skeletal, smooth and cardiac muscle by:

   a. structure and cellular organization
   b. differences in the biochemistry of contraction
   c. differences in rate, force and duration of contraction.
22. Identify connective tissue elements which bind bone to bone. Identify connective tissue elements which bind muscle to bone.

23. Recognize the three types of skeletal muscle fibers. Emphasize their differences and similarities. How do they vary in force and velocity of contraction? How do they vary in cellular structure?

24. Identify the muscles, origins, insertions and actions as assigned in the laboratory. *

The Nervous System

Fundamentals of the nervous system and nerve tissues

1. Understand the basic functions of the nervous system.

2. Recognize the structural and functional divisions of the nervous system.

3. Recognize the different types of neurons, their general structure and the roles of cell structures. *

4. Describe the different types of neuroglial cells and cite their functions. *

5. Explain the importance of the myelin sheath. How is it formed in the PNS and the CNS?

6. Distinguish between ganglia and nuclei and between a nerve and a projection tract.

7. Define resting potential, graded potential and action potential.

8. Diagram an action potential and explain its features.

9. Explain how action potentials are generated and propagated along neurons.

10. Distinguish between absolute and relative refractory periods.

11. Define saltatory conduction and contrast it with cable conduction.

12. Describe the structure of the synapse and explain the process of synaptic transmission.

13. Distinguish between excitatory and inhibitory postsynaptic potentials.

14. Define “neurotransmitter” and give several examples.

15. Explain the difference between spatial and temporal summation.

16. Name the major brain structures including the medulla oblongata, pons,
midbrain, cerebellum, cerebrum, diencephalon, thalamus, hypothalamus, corpus callosum, pineal body, corpora quadrigemina, and the hypophysis.

17. Describe the production and flow of cerebro-spinal fluid. *
18. Distinguish between commissural, association, and projection tracts.
19. Recognize the gross and microscopic structure of the spinal cord. *
20. When presented with the name of a major spinal cord tract, classify it as sensory or motor and identify its origin and termination.
21. Describe the structure of the cerebrum including the central sulcus, longitudinal fissure, temporal fissure, transverse fissure, precentral gyrus and postcentral gyrus. *
22. Describe the location of the general functional regions of the cerebrum and describe the role of each region.*
23. Discuss the locations and functions of the thalamus, hypothalamus and corpus callosum. *
24. Describe the meningeal layers of the brain and spinal cord. *
25. Trace neural impulse flow from receptors to the appropriate cerebral cortical region based on the homunculus. Also, trace neural pathways from the cerebral motor cortex to specific effectors. Explain what is meant by “decussation”.

The Peripheral Nervous System

26. Describe the general structure of peripheral nerves. *
27. Explain why it is more likely that peripheral nerve damage will be repaired than damage within the CNS.
28. List the twelve cranial nerves by number, name and function. *
29. Describe how spinal nerves are associated with the spinal cord (include discussion of the dorsal root, dorsal root ganglion, dorsal ramus, ventral root and ventral ramus), and explain what is meant by cervical plexus, brachial plexus, lumbar plexus and sacral plexus. *
30. Describe the reflex arc and distinguish between ipsilateral and contralateral reflex arcs.

The Autonomic Nervous System

31. Compare the somatic and autonomic nervous systems relative to effectors, efferent pathways, and neurotransmitters released.
32. Compare the general functions of the sympathetic and parasympathetic nervous systems. Note the effects of the sympathetic and parasympathetic
33. Describe the site of CNS origin, locations of ganglia, and general fiber pathways of the parasympathetic and sympathetic divisions.

34. Define cholinergic and adrenergic fibers and list the different types of cholinergic and adrenergic receptors.

35. Describe the pathways which conduct impulses from the spinal nerves to the autonomic pathways of the sympathetic nervous system.

36. Describe the sympathetic chain, lateral ganglia, collateral ganglia and terminal ganglia.

37. Explain the phenomenon of “referred pain”.

**Lecture Outline: Topics covered**
1. The Science of Anatomy and Physiology
2. Tissue Organization
3. The Integumentary System
4. Skeletal System: Bone Structure and Function
5. Skeletal System: Axial and Appendicular Skeleton
6. Skeletal System: Articulations
7. Muscular System: Muscle Tissue
8. Muscular System: Axial and Appendicular Muscles
10. Nervous System: Brain and Cranial Nerves

**Laboratory Outline: Topics covered**
1. Anatomical Language
2. Organ Systems and Body Cavities
3. Compound Light Microscope
4. Cell Structure and Cell Cycle
5. Transport Across the Plasma Membrane
6. Tissues
7. The Integumentary System Structure and Function
8. Bone Structure and Function
9. Axial Skeleton:
10. Appendicular Skeleton:
11. Joints and Synovial Joint Movements:
12. Skeletal Muscle Structure
13. Skeletal Muscles and their Actions
14. Skeletal Muscles and Their Actions:
15. Nervous Tissue:
16. Spinal Cord Structure:
17. Spinal Nerves:
18. Somatic Reflexes
19. Brain Structure and Function:
WHAT IS EXPECTED OF STUDENTS:

** Students must read chapters and exercises ahead of time.
** Lecture chapters should be read ahead of lecture, and reviewed after lecture. Research shows that information reviewed within 24 hours, and a second time within 72 hours of being presented is retained easier. This is a fast paced course; don’t fall behind.
** Students may be quizzed orally, during lecture, over the material covered in the previous lecture.
** Work on the questions at the back of the chapters, the study guide, and the quizzes offered in the texts’ website.
** Seek help. Take advantage of the instructor’s office hours, feel free to come by and ask questions or seek help.

Study Tips

- **Don’t procrastinate.** Start today (not next week) to read and study.
- **Show up** for class and be actively listening (not daydreaming). Some material will be from sources other than the text. You will not know the material if you have missed class.
- Lecture chapters should be read ahead of lecture, and reviewed after lecture. Research shows that information reviewed within 24 hours, and, a second time, within 72 hours of being presented is retained easier. This is a fast paced course; don’t fall behind!
- **Read** your textbook; don’t waste your $100! We will cover 1-2 chapters per week. First, go over headings, diagrams and charts. Then (before reading the chapter) read over the questions you are to answer. Then read & answer the questions. Finally read the summary at the end.
- Students may be quizzed orally, during lecture, over the material covered in the previous lecture.
- **Seek help.** Take advantage of the instructor’s office hours, feel free to come by and ask questions or seek help.
- Take courses or seminars to improve your study skills. Do you know how you best learn? Different approaches to studying? Ask me for some ideas.
- Each day before lecture begins, read the lecture notes from the day before. This will cut study time during preparation before tests.
- Make a vocabulary with definitions or identifications. Your medical vocabulary should be expanding exponentially during this course. You can find charts on line to use for practice in labeling parts.
- **Work with a study partner,** preferably someone who is serious about learning A & P and using time productively. Quiz each other on vocabulary, concepts, and identifications.
- **Practice being the “expert”** with your family and friends. Most people are very interested in the human anatomy and physiology. Tell them about what you learned in class. Explaining a concept to someone else helps you remember it longer
eCAMPUS
1. Class **notes** and **announcements** will be posted on the web on eCAMPUS at "ecampus.dcccd.edu".
2. You are expected to access "eCAMPUS" on a regular basis to be up to date with the class information.
3. Make sure you enter your email address. Let me know if you need help with "eCAMPUS".
4. All students can apply for a free email address/internet access at the Computing Center.