

ZOOL 2250  
Dr. Jeffery Scales  
N 262

Human Anatomy  
jscales1@csustan.edu  
Thurs. 2-4 pm and by appointment

Fall 2018  
209.667.3480

### **Course Description**

This course serves as an introduction to the microscopic, gross, and functional anatomy of the human body. It is presumed that you already have a basic understanding of biology from previous courses (BIOL 1010/1020 or BIOL 1050 are recommended prerequisites). If not, you will want to review cell structure and function (Ch. 2 & 3 in your text). The lecture and lab are combined into a single grade. While lecture and lab are related, the material covered in each may differ in content and/or focus. Only letter grades are available for this course (no CR/NC).

### **Course Objectives**

By the end of this course you should:

- Understand the organization of the human body and the relationship between structure and function
- Be able to describe the major features of each organ system and understand the anatomical/functional relationships between organ systems
- Identify internal anatomy, both gross and microscopic, and to relate this to surface features
- Understand the nature of science and the biological significance of structure and apply this knowledge in future courses and daily lives.
- Employ the appropriate use of anatomical terminology
- Have the laboratory/dissection skills necessary for anatomical study

### **Required Texts/Materials**

- *Anatomy and Physiology* from OpenStax, (ISBN 1938168135, <https://openstax.org/details/books/anatomy-and-physiology>). This book is available at no charge as a pdf, or at low cost in print, Kindle, or IBook versions at CNX.org. Most other college Human Anatomy or Human A&P textbooks are also acceptable.
- Jones, TD. *Laboratory Manual for Human Anatomy* (available on the course Blackboard page; it is recommended that you have it printed at FedEx, 1451 Geer Rd.)
- Dissection Kit: mall (blunt) probe, sharp/blunt scissors, iris scissors, specimen forceps, fine or tissue forceps, dissection knife, scalpel handle with blades.
- Gloves (nitrile gloves, rather than latex, are recommended)

### **Recommended Texts/Materials**

- Kreiger, PA. 2013. *A Visual Analogy Guide to Human Anatomy*, 3e. Morton.
- Sebastiani, AM and DW Fishbeck. 2005. *Mammalian Anatomy: The Cat*, 2e. Morton.
- Borror, DJ. 1988. *Dictionary of Word Roots and Combining Forms*. (Available on Bb)
- Lab coat (or old shirt)

### **Course Information**

Information for the course (syllabus and other relevant material) can be found on Blackboard (blackboard.csustan.edu). Communication regarding the course will be done *via* Blackboard or email. Thus, it is the student's responsibility to check the course Blackboard page and your university email regularly. If you need to contact me, use email rather than telephone (I rarely check my phone messages). Include your name and the course number in the subject line along with the subject. Before emailing me, make sure the answer to your question is not already in the syllabus.

### **Lectures**

Lectures are organized with the course objectives in mind. Human anatomy is an extensive topic so we will cover a large amount of material in a relatively short time. I expect students to read the

accompanying material in the textbook prior to lecture, regularly attend lecture, arrive on time, and take notes. Lecture slides will be posted to Blackboard (but lecture notes will not). If you feel that I am covering material too fast, please ask me to slow down, repeat the material, or ask me questions related to the material being presented.

### **Labs**

Labs are designed to allow students to actively interact with materials that aid in a more complete understanding of anatomy (e.g., microscopic material, models, and dissection materials). The lab manual is written as a guide for you to follow to better understand human anatomy and as such, it is imperative that you carefully read and follow the lab manual. If you do not bring a printed manual to lab, you may be asked to leave.

Dissection is a required component of this course. Students who do not actively participate in dissection will earn a failing grade (F) regardless of the points earned on exams, quizzes, etc.

### **Open Lab**

The anatomy lab (N224) will generally be available for study/review on Fridays from 9:00 am - 3:00 pm. It is highly recommended that you make use of this time (students that utilize open labs pass the course). However, inappropriate use of the lab or destruction/loss of lab materials during open lab will result in cancellation of this privilege for the duration of the term for all students.

### **Lab Safety**

Each student must watch the tutorial on the BioLab Safety course on Blackboard and pass the quiz with 100% correct. Failure to do so by 5:00 pm Friday, 07 September will result in removal from the course.

### **Attendance**

Regular attendance in lecture and lab is vital to your learning and success in this course. You are expected to attend every class, arrive on time, and stay until the end of the lecture or lab period. Attendance involves both your physical presence as well as your attention and participation. If an absence is unavoidable, it is the student's responsibility to notify the professor as soon as possible. If a student is absent, the student (not the instructor) is responsible for all information and material missed. Poor attendance or disruptive behavior will be taken into consideration when grading. Attendance for all laboratories is mandatory. Unexcused absences for exams will result in no score.

### **Exams & Quizzes**

Exams are written with the course objectives in mind. The questions will be written in technical and standard English (like the textbook and lab manual). Because the information in this course cannot be divided into discreet units, exams are cumulative to some extent. Unless otherwise stated, exams will begin at the beginning of the scheduled class time. Exam scores will be posted on Bb after they are graded. After exams have been returned, students have one week to dispute scores; no scores will be changed after that time. Correct spelling and good penmanship is necessary for effective communication. Therefore, spelling errors will result in lost points and illegible answers will receive no credit.

Don't put off reviewing for exams; start well before the deadlines approach. It is best to start studying for the first (and final) exam on the first day of class (see *Tips for Success* for study suggestions). Carefully look at the *Course Schedule* for exam dates and plan your schedule accordingly.

### Lecture Exams (380 points)

There will be four lecture exams (One 40-point exam and three 80-point exams) and a final exam covering both new and cumulative material (100 points). Exam questions will randomly survey the material presented in lecture and will include multiple-choice, short answer, short essay, or other forms of questions. Thus, you will need a Scantron form 882E and a pencil for each lecture exam. 1-point will be deducted for every two spelling errors, but errors in which another word is spelled correctly will be marked wrong (e.g., humorous instead of humerus). Illegible answers will not be graded and will earn zero points.

No exams will be handed out after the exam has begun. If you are late, you will not be able to take the exam. You may not leave during exams so take care of necessary business beforehand.

Only the Scantron forms of exams will be returned. You may carefully look over the exam during office hours (I encourage you to do so). You will have one week after exams have been returned to dispute your scores; after that, no scores will be changed.

If you take all of the lecture exams, the lowest lecture exam scores will be replaced by the final score (by percent) if the final score is higher than the percentage of your lowest lecture exam. If you are absent for a lecture exam for **compelling and documented circumstances**, your score on that exam will be calculated from the percentage earned on the final exam. If your absence is not excused, your score on the lecture exam will be zero. If subsequent exams are missed, you will earn no points.

### Lecture Activities/Homework (30 points)

There will be regular in class activities and small homework assignments throughout the semester. These will be announced and provided in class only. Students will be required to bring a writing utensil and paper to every class in order to participate. Points from activities or homework cannot be reclaimed if missed.

### Lab Practical Exams (350 points)

There will be four lab practical exams (One 50 point practical and three 100 point practical exams, see *Course schedule*). The questions will focus on identification and understanding relationships and function. Anything included in the lab manual (unless specifically omitted) may be included on these exams. As a way of testing your understanding, practical exams may include unknowns (*i.e.*, material that you may not have not seen in lab). A practical exam form will be supplied; you only need bring a pen or pencil (you may also want to bring gloves and a probe).

For each practical exam, there will be 2 questions per station; each question will be worth 2 points. You will have 90-seconds to answer the questions at each station. After 90-seconds you will be instructed to move to the next station. After you have been to all stations, you will have 5 minutes to review questions. 2 points will be lost for every three spelling errors, but errors in which another word is spelled correctly will be marked wrong (*e.g.* humorous instead of humerus) and not as a spelling error.

Students must sign-up online for each lab exam (information will be given on blackboard). Sign-ups will be made available one week prior to the exam. Lab practical exams will generally not be given during regular lab times (see Course Schedule for lab practical dates). Students will not be allowed to enter once the practical exam has begun. There no make-up lab practical exams given. If an absence for a lab practical exam is excused, the score (percentage) of the last practical will replace the missed practical.

Subsequent missed exams will earn no points and cannot be replaced. Absences will only be excused for documented, necessary circumstances.

### Lab Quizzes (50 points)

At the end of each lab, you and your partner will be given a quiz over the day's material (quiz questions may be verbal, written, etc). Anything in the lab manual (unless specifically omitted) may be included in the quiz. The quiz will consist of 2 questions. You will earn 1 point for taking the quiz and 2 points for each correct answer; a total of 5 points are available each day (50 total points for the semester). Students who do not attend lab from the beginning will not be able to take the quiz. Students who leave without taking a quiz will earn no points. Quizzes cannot be made up.

### **Grading**

Only letter grades can be earned, CR/NC is not available for this course!

Your grade will be determined by your combined performance in lecture and lab. Due to potential privacy issues, scores and/or grades will not be given out *via* e-mail or phone. Scores will be posted on Bb. After the end of the term, you may access your grade from <http://my.csustan.edu>. It is expected that you will keep track of your scores (including all graded materials) for the duration of the term. Dissection is a necessary component to the lab. Students who do not actively participate in dissection will receive a failing grade for the course regardless of their scores. There will be no other points or assignments available beyond those mentioned herein (i.e. no extra credit). A total of **810 points** are available. Letter grades will be assigned as follows unless natural breaks in the class determine a downward shift (the use of +/- grades is at the instructors' discretion):

|    |   |
|----|---|
| A  | ≥ 688 points (85%)                                    |
| B  | ≥ 607 points (75%)                                    |
| C  | ≥ 486 points (60%)                                    |
| D  | ≥ 405 points (50%)                                    |
| F  | < 405 points (or lack of participation in dissection) |
| WU | < 405 points and one or more unexcused exam absences  |

Once assigned, grades will not be changed unless errors in grade calculations occurred.

Historically, most student scores have not increased significantly after the first exam or practical. If your scores on the first exam and practical are below the percentage for the grade you hope to achieve, you should consider your continued enrollment or make drastic changes to your approach to this course.

### **Course Drop and Withdrawal Policy**

The drop/withdrawal policies for this course are the same as the university policies: "Adding or dropping courses after the Enrollment Census Date will not be allowed. After the Enrollment Census Date, students are responsible for completion of the course(s) in which they are enrolled...Withdrawals after the Enrollment Census Date and prior to the last twenty percent of instruction may be assigned only for serious and compelling reasons." September 19 is the Enrollment Census Date.

### **Recording Policy**

The use of audio and/or video recorders or cameras (including cell phone cameras) is not permitted during lecture or lab. An exception is made for students who are registered with Disability Resource Services and approved for this accommodation.

### ***Students with Disabilities***

Students with documented disabilities need to make an appointment with the instructor as soon as possible to discuss course adaptations and/or accommodations. If you have an undocumented disability, please contact Student Support Services.

### ***Personal Integrity***

**All students are expected to be respectful of their classmates and the instructor at all times.** Any behavior that interferes with the instructor's ability to teach or the ability of students to learn will not be tolerated. This means that there will be no socializing and electronics such as cell phones must be turned off during lecture. Distracting or disruptive behaviors will be dealt with as severely as university regulations allow. Behavior that is not consistent with the Student Conduct Code will result in immediate expulsion from the course, a failing grade, and the matter will be referred to the Office of Student Judicial Affairs. **This includes academic dishonesty in any form!** Misuse of lab materials will result in grades being withheld until the department has been compensated for damaged materials.

### ***Implied Contract***

This syllabus serves as a contract between you and the instructor. Your continued enrollment in this class denotes your understanding of, and agreement with, the material herein. You are expected to print this syllabus, read it carefully, and keep it in your notebook to refer to during the term.

### ***Tips for Success***

Students often ask what they should do to be successful in this course, I invariably answer with the following:

- Dedicate the necessary time to the course. You should schedule at least 6-9 hours/week outside of class for preview and review of materials.
- Attend and actively participate in lecture and lab.
- Read the relevant material before lecture (see lecture schedule); previewing allows you to be familiar with the concepts.
- Don't Fall Behind! – This course covers a large amount of material and each lecture/chapter builds on one another. Because of the pace of this course it will be very difficult to catch up if you fall behind. Keep up with the readings, lectures, and homework and you will be able to understand, retain, and enjoy the information much more. Only you are responsible for your education, so put in the time learn the material!
- Take good notes in lecture. Write down the ideas discussed. Don't try to write every word said or just copy the text that may be on the slide. Take notes using a pen or pencil, not a keyboard.
- Re-write or type (don't just re-copy) your lecture notes as soon after the lecture as possible. Use your own words. Integrate information from reference sources and lecture. Store your notes in the cloud so you can access them anytime and anywhere.
- When there are topics you don't understand, refer to your resources for clarification and if that doesn't work, mark the section in your notes and ask during the next class or office hours.
- Review your lecture notes daily starting with the current topic and then, beginning with the very first page and going to the last page. Make corrections or additions as needed to increase clarity or completeness. Write summaries.
- Limit study sessions to 50-minutes; even 10-15 minute sessions are useful. Take short breaks between sessions; switching study topics between sessions is recommended.
- Read the relevant material in the lab manual before lab. Use the index and glossary in the text and a dictionary if you find terms that are unfamiliar.

- When working in the lab, refer to the lab manual! Use supplements only when you are lost or confused. Students often think that pictures are necessary to accurately dissect and identify structures: this is incorrect. Reading and following instructions gives context and understanding that cannot be gleaned from images.
- Re-read the manual when reviewing. When doing so, try to envision the material. If you cannot, use supplemental materials and images to help and then return to the lab manual.
- Work in groups. Studying with others is often an effective way to learn material for many people. Form study groups (even just pairs) to talk through ideas. Explain concepts to each other (teaching is one of the best ways to learn something) and challenge each other's ideas. Working/talking through problems with another person, like your lab partner, can be a very effective learning tool. Review weekly with other students who are also taking the time to study and review.

Following these tips should allow you to learn more efficiently and make you more confident about your understanding; both of which translate into higher exam scores!

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COURSE SCHEDULE\*

| Date   | Lecture Topic                               | Date             | Lab Topic/Chapter(s)   |
|--------|---|------------------|--|
| 22 Aug | Introduction**                              | 22 Aug           | <i>No labs</i>   |
| 24 Aug | Microanatomy/Tissues                        | 24 Aug           |  |
| 27 Aug | Microanatomy/Tissues                        | 27 Aug<br>29 Aug | Microanatomy   |
| 29 Aug | Microanatomy/Tissues                        |                  |  |
| 31 Aug | Skeletal System                             |                  |  |
| 03 Sep | No class (Labor Day)                        | 03 Sep           | <i>No labs</i>   |
| 05 Sep | Skeletal system                             | 05 Sep           |  |
| 07 Sep | Skeletal System                             | 06 Sep<br>07 Sep | <b>Lab practical 1 (50 pts)</b>  |
| 10 Sep | Skeletal System                             | 10 Sep<br>12 Sep | Skeletal System: Bone gross anatomy, axial skeleton                    |
| 12 Sep | <b>Exam 1 (Half Exam)</b> , Skeletal System |                  |  |
| 14 Sep | Skeletal System                             |                  |  |
| 17 Sep | Skeletal System                             | 17 Sep<br>19 Sep | Skeletal System: Appendicular Skeleton, Articulation                   |
| 19 Sep | Muscular System (last day to drop!)         |                  |  |
| 21 Sep | Muscular System                             | 24 Sep<br>26 Sep | Muscular System: Microanatomy, muscles of the hind limbs and forelimbs |
| 24 Sep | Muscular System                             |                  |  |
| 26 Sep | Muscular System                             |                  |  |
| 28 Sep | Muscular System                             |                  |  |
| 01 Oct | Muscular System                             | 01 Oct<br>03 Oct | Muscular System: Trunk muscles, head & neck muscles                    |
| 03 Oct | Circulatory System                          |                  |  |
| 05 Oct | <b>Exam 2</b>                               |                  |  |
| 08 Oct | Circulatory System                          | 08 Oct<br>10 Oct | <i>No labs</i>   |
| 10 Oct | No class (Columbus Day observed)            | 11 Oct<br>12 Oct | <b>Lab practical 2 (100 pts)</b>                                       |
| 12 Oct | Circulatory System                          |                  |  |
| 15 Oct | Circulatory System                          | 15 Oct<br>17 Oct | Circulatory System   |
| 17 Oct | Respiratory System                          |                  |  |
| 19 Oct | Respiratory System                          | 22 Oct<br>24 Oct | Respiratory and Digestive Systems                                      |
| 22 Oct | Respiratory System                          |                  |  |
| 24 Oct | Respiratory System                          |                  |  |
| 26 Oct | Digestive System                            |                  |  |
| 29 Oct | Digestive System                            | 29 Oct<br>31 Oct | Urinary System   |
| 31 Oct | <b>Exam 3</b>                               |                  |  |
| 02 Nov | Digestive System /Urinary System            |                  |  |
| 05 Nov | Urinary System                              | 05 Nov<br>07 Nov | Reproductive System  |
| 07 Nov | Urinary System /Reproductive System         |                  |  |
| 09 Nov | Reproductive System                         |                  |  |
| 12 Nov | No class (Veteran's Day)                    | 12 Nov<br>14 Nov | <i>No labs</i>   |
| 14 Nov | Reproductive System                         |                  |  |
| 16 Nov | Nervous System                              | 19 Nov<br>20 Nov | <b>Lab practical 3 (100 pts)</b>                                       |
| 19 Nov | Nervous System                              |                  |  |
| 21 Nov | Nervous System                              |                  |  |
| 23 Nov | No class (Thanksgiving break)               | 23 Nov           | <i>Lab closed</i>  |

|        |                                   |                  |                                  |
|--------|-----------------------------------|------------------|----------------------------------|
| 26 Nov | Nervous System                    | 26 Nov<br>28 Nov | Nervous System                   |
| 28 Nov | <b>Exam 4</b>                     |                  |                                  |
| Nov 30 | Nervous System                    |                  |                                  |
| 03 Dec | Nervous System                    | 03 Dec<br>05 Dec | Nervous system                   |
| 05 Dec | Nervous System                    |                  |                                  |
| 07 Dec | Integument/Human Biology          |                  |                                  |
| 10 Dec | Human Biology                     | 10 Dec<br>11 Dec | <b>Lab practical 4 (100 pts)</b> |
| 11 Dec | No class (Reading Day)            |                  |                                  |
| 12 Dec | <b>Final Exam (8:30-10:30 am)</b> |                  |                                  |
|        |                                   |                  |                                  |

\*Note that the lecture schedule is tentative and will likely change, but it will follow the same sequence. However, the lab schedule and exam/practical dates will only change if the instructors deem it necessary.

\*\*You should have read the *Preface* and *Introduction* in the Lab Manual prior to lab as it is presumed that you have a clear understanding of that material before the semester begins. Also, while we will not cover the basic biology material in the text, it is presumed that you have covered this previously. If not, be sure to spend time to familiarize yourself with this material.