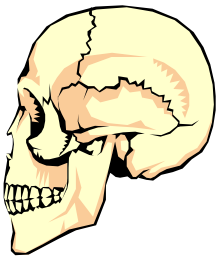

METX135/METX135L:
Human Functional Anatomy and Human Anatomy Lab
Summer Session I 2019

Instructor:

Manel Camps	mcamps@ucsc.edu	459-5396
Office	Physical and Biological Sciences	PSB434
Office hours	Wed 2:00 -3:00pm	

Teaching Assistants:

Name:	Email address	Office hours	Location (lab)
Giselle Quevedo	giqueved@ucsc.edu	Tuesday 2-4:00	217 Thimann
Jay Kim	jaykim@soe.ucsc.edu	Thursday 2-4:00	217 Thimann

METX135

Time:	Mon, Wed	9:00 am -12:30 pm
Location:	Engineering 2, 194	

METX135L (Lab)

Time:	Tue, Th	9:00 am -11:00 am 11:00 am -1:00 pm
Location:	Thimann Labs 217	
Open lab	Wednesday Thimann Labs 215	2:00 -4:00 pm

Note Cadaver Lab meets at the Physical Anthropology lab on the fourth floor of Social Sciences Building 1

OVERVIEW

This course is a rigorous systems-based course in anatomy. Lectures will provide an overview of functional anatomy at all levels, from the systems to the tissues. The goal is to provide a mechanistic understanding of the different structures in our body as a foundation for human-health oriented studies. The concurrent laboratory section (enrollment in which is mandatory) will place emphasis on nomenclature and recognition of anatomical and histological features.

Course goals:

1. To identify the different structures present in the human body and to acquire the vocabulary necessary to adequately describe them. Musculoskeletal anatomy will be emphasized, but neuroanatomy and organ systems will also be covered.
2. To learn about the cellular and extracellular components present in these structures at the microscopic level as a way to understand their physiological function.
3. To learn the interplay between different systems in a healthy body as the foundation for understanding disease states.

This class is very demanding. The instructors will make every effort to present the material in an understandable manner but this class requires a lot of studying. *You need to be prepared to dedicate at least 15-20h a week to these two classes* and to make every effort to keep up with the material as it is being presented.

COURSE ORGANIZATION

Lectures:

Traditional lectures: Each week, material will be delivered through traditional lectures, which will be based on the textbook and supplemented through supporting materials from the web or additional readings. Images of anatomical structures as they are being described in the lecture will be shown as slides; at the same time, the terms being introduced in each lecture will be listed in a vocab list. To consolidate the material learned in these lectures, active learning exercises will be listed on the vocab list and done in class (if short) or given as assignments and discussed in the next class.

Lecture materials: will be posted on Canvas. These include:

- Lecture slides
- A list of key terminology or "vocab list"; this list can also be used later as a study guide
- Active learning questions; most of these will be embedded in the vocab list.
  At least 20% of the questions in the exams will be drawn from these questions

Laboratory:

Laboratory manuals will be posted on canvas. **Please make sure to print them out and to bring them to your session.**

Individual laboratory sections meet twice per week and last 2 hours each. They will include a short introduction to the material and moving through a number of stations with the information necessary to fill out the worksheet.

Two of the labs will be observational cadaver labs. Note that those will be held at the Physical Anthropology lab on the fourth floor of Social Sciences Building 1.

No pictures are allowed, but additional access to lab materials will be provided during TA office hours (which will be held in the lab) and during open lab sessions the week before practical exams.

RESOURCES:

Textbook:

Course:

Human Anatomy, by Kenneth Saladin 5thth Edition McGraw Hill Eds.
A customized version of the textbook with Connect card can be found at the Baytree bookstore (see below).
Alternatively, an all-electronic version is available as well.
Several copies will be put on reserve at the library.

Topics that are not covered by the textbook will be covered through supplemental material or videos; if discussed in class, these supplemental materials will be included in the tests.

I will provide sets of coloring plates from Netter Anatomy to use as a reference as well. They will be posted on Canvas (in the corresponding Lecture folder).

Lab:

Histology: a Text and Atlas, by Michael H. Ross and Wojciech Pawlina
Lippincott Williams & Wilkins Eds. Sixth Edition (2011)
Several of these textbooks (one per microscope) will be available during histology lab sessions and several will be put on reserve at the library so you should not need to purchase this textbook.

Connect:

Connect has a number of study materials, including virtual dissection and quizzes. We will use Connect for LearnSmart assignments, which will constitute 20% of the final grade (see below).

Connect access codes may be packaged with a new textbook in the bookstore, with considerable savings.

To register in Connect, please visit
https://connect.mheducation.com/class/m-camps-summer-2019 and click "Register Now"
You can register in Connect and have access without a code for a limited time period (typically three weeks).
The course name is "METX135 with LearnSmart and LearnSmart Prep" and the section "Summer 2019"

If you have trouble with registration, please contact Customer Support at
http://bit.ly/StudentRegistration.

If you have any issues while registering or using Connect, please contact McGraw -Hill's Customer Experience team through http://www.mhhe.com/support or at 800-331-5094.

Deadlines:

- **Add**: Thu, June 27
- **Drop**: Mon, July 1 (tuition reversed*)
- **Financial Aid Disbursement**: June 17
- **Change Grade Option**: Fri, July 5
- **Request "W" Grade**: Fri, July 12 (no tuition reversal)
- **Grades Due**: Thu, August 1

Weekly Schedule

Date	Lecture	Date	Lab
Mon June 24	**Lectures 1,2** Anatomical terms 8-13* Bone Biology 133-138 Axial skeleton 152-175 Use of virtual dissection tools	Tu June 25	Introduction to anatomical terms, Axial skeleton Bone and muscle histology
Wed June 26	**AL1:** Axial skeletal features you can palpate **Lectures 3,4** Terms of movement 213-230 Appendicular skeleton 185-200 Joints 206-213	Th June 27	Appendicular skeleton Muscles of head, neck and thorax

	Bipedality Supplemental reading Also 166, 199-200		
Mon July 1	**AL2** **Active Learning Session #2** Appendicular skeletal features you can palpate Can you point to elements of the skeleton that are important sites for muscle attachment? Compare bones of upper and lower limb **Lectures 5,6** Muscles of head and neck 268-278 M. of arm, hand and torso 279-280 293-309		Muscles of upper and lower limbs, abdomen and pelvic floor
Wed July 3	**AL3** How has our view of human evolution changed since the 70es? Surface anatomy of head and upper limb **Lectures 7,8** Muscles of torso 284-286 Muscles of abdomen 281-283 Muscles of pelvic floor 287-288 Muscles of respiration 279-280 Muscles of lower limb 310-320 Muscles of the feet 317-323	Th July 4	Holiday
Mon July 8	**AL4** Surface anatomy of lower limb and torso Agonist-antagonist pairs **Lectures 9,10** Special organs: Taste, smell 466-470 Hearing 470-475 Balance 472-479 Eye 480-484	Tu July 9	**Practical Midterm**
Wed July 10	**Midterm#1: muscles and bones**	Th July 11	Observational cadaver lab **Note change in location:** fourth floor of the Social Sciences 1Building Extra open lab hours
Mon July 15	**Lectures 11,12** Nervous system: Circuitry 352-353 Cerebrum 415-426 Peripheral NS 383-391, 427-437	Tu July 16	Special organs, PNS CNS Dissection of a sheep's brain Dissection of a cow's eye
Wed	**Lecture 13,14**	Th	Circulatory

July 17	ANS 442-457 Heart 539-556 Circulatory system 573-600 CSF 402-405	July 18	Heart Dissection of a cow's heart Digestive Respiratory
Mon July 22	**Lecture 15,16** Respiratory 631-643 Digestive 653-678 Flora	Tu July 23	Observational cadaver #2 **Note change in location:** fourth floor of the Social Sciences 1Building Extra open lab hours
Wed July 25	**Final**	Th July 25	**Practical Final**

*****Pages refer to original, not revised numbering

EVALUATION

The course and lab will be evaluated separately, and evaluations will be based on the scores from exams and homework assignments; in the case of labs, missing sessions will be penalized (see below).

In both cases the final grade will be determined by curve.

Lecture:

- *One* ***midterm,*** and one ***final exam***, **each** of which will be **40%** of the grade.
    - Exams will consist of an objective portion (multiple choice, fill-in, and matching) and a short answer portion.
    - Practice exams (both midterm and final) have been posted on canvas.
    - A study guide will be posted on canvas the week before the corresponding exam

- **LearnSmart assignments** will be **20%** of the final grade.
    - This consists of assigned reading followed by a quiz to test the knowledge of the material. Failed responses are not counted against you, you just need to keep trying until you get the key concepts right, at which time the assignment is considered complete.
    - The goal is to familiarize students with lecture materials ahead of the corresponding lecture.
    - Assignments for each lecture vary in time and total points earned, but are calibrated to take no more than 1 h. 1 hour corresponds to 10 points.
    - Assignments can be started anytime. They are due before the corresponding lecture.
        - Submissions for Lectures 1,2,3,4 will get 100% credit if submitted by July 1, to give students time to purchase access and sign up for LearnSmart.
        - Late submissions submitted any time before the final will get 50% credit.

    The schedule of assignments, and the expected time and credit earned for each assignment are laid out in detail below:

Assignment	Topic	Expected time	Credit (points)	Deadline for full credit* (at 8:00 am)
Lecture 1	Bone biology	20	3	Mo 7/1
Lecture 2	Axial skeleton	45	7	Mo 7/1
Lecture 3	Appendicular skeleton	45	7	Mo 7/1
Lecture 4	Joints	20	3	Mo 7/1
Lecture 5	Axial muscles	60	10	We 7/3
Lecture 6,7,8	Appendicular muscles	60	10	We 7/3
Lecture 9,10	Special organs	60	10	Mo 7/8
Midterm exam				
Lecture 11	Brain	45	7	Mo 7/15
Lecture 12	PNS	45	7	Mo 7/15
Lecture 13	ANS	30	5	We 7/17
Lecture 13	Heart	45	7	We 7/17
Lecture 14	Circulatory	30	5	We 7/17
Lecture 15	Respiratory	30	5	Mo 7/22
Lecture 16	Digestive	60	10	Mo 7/22
Final exam				

- Submissions after deadline and before the final exam get credited 50% of total points.
- You get one grace missed assignment for incidentals, but if you miss more than one I won't give full credit for additional missed assignments
- The time you actually spend of each assignment gives you an idea how proficient you are with this class' material. If it takes you longer than expected, this means you probably need to study more than the average student and/or use a different approach to study in order to get a good grade.

Active learning assignments: Vocab lists will have active learning assignments for you to complete and that we'll go over in class. To give you credit for this work, at least 20% of the questions included in the exam will be from these assignments.

Grade scale:

Possible points (%)	Grade
>95	A+
90-95	A
85-90	A-
80-85	B+
75-80	B
70-75	B-
65-70	C+
60-65	C
55-60	C-
50-55	D
<50	F

Lab:

- Attendance is mandatory,

Failure to attend will be penalized with 2% of the final grade if it happens once, 10% it if happens twice and failing the class if it happens 3 or more times.

- Two ***laboratory practicals*** will be given; **each 50%** of the final grade. Please bring your ID to the exam to identify yourself.
  PLEASE LOOK AT THE SYLLABUS SCHEDULE IF YOU CANNOT MAKE THE LAB PRACTICAL DATES THEN SWITCH SECTIONS NOW OR DROP THE COURSE.

Grade scale:

Possible points (%)	Grade
>95	A+
90-95	A
85-90	A-
80-85	B+
75-80	B
70-75	B
65-70	B-
60-65	C+
55-60	C
50-55	C-
45-50	D
<45	F

How to succeed in this course:

1. Come to every lecture and lab session.
You will get more out of the lecture if you are there in person with very little to distract you, Missing lab sessions can result in serious deductions from your grade!

2. Read the textbook before each lecture.
The lecture should make sense after reading the textbook; if not, please ask questions during lecture. Learmsmart assignments are meant to guide you through this reading.

3. Study frequently, regularly, and efficiently

Frequently:
How much time you need to devote to the course outside of class in order to get an “A” will vary among individuals, but in most cases, it will be in the range of 2-3 hours for every hour you spent in class. That’s 10-15 hours a week on top of attending class!

Regularly:
There are a lot of terms to learn in anatomy. If you wait until right before an exam and try to cram them all in your head you will get the equivalent of an emotional ice cream headache! It’s best to space out your studying sessions throughout the quarter. An example of a good strategy would be setting a few hours aside the day before each lecture and lab session to review the material from the last class and read the textbook to prepare for tomorrow. Don’t fall behind on the material, as it will be harder to follow the lecture, which will set you further behind.

Efficiently: Not all studying methods are equal!

The best methods involve actively doing something and also making connections between the different lectures and between lecture and lab. Studying in group often helps.

Good ideas:

- USE VOCAB LISTS as a study guides for lecture and also to identify structures you have seen in lecture you are seeing again in lab.
- GO TO OPEN LABS to study for lab practicals.
- Use lab to help you with lecture and vice-versa. There should be a lot of overlap and synergy between the two classes.
- Make flashcards and quiz yourself or a study partner.
- Study in a group and take turns teaching the topics from lecture to the group.
- Use practice exams to see how well you know the material, but only AFTER you have studied the material, don't try to just memorize the responses to the practice exams.
- In lab with your partner, take turns quizzing each other on the different features of each model.
- In lab, "teach" your partner the names and functions for each model feature.
- Use the connect software to take anatomy quizzes.
- Use a detailed atlas, like Netter's Atlas of Human Anatomy, to help you identify features in lab.
- Ask for help as soon as you need it. The instructors, teaching assistants, and learning assistant are all here to help you. Please come to office hours or e-mail questions when you are having trouble, we don't bite!

Inefficient ideas:

- Trying to absorb the information by simply looking at the lecture slides or figures from the textbook.
- Memorizing definitions of terms.
- Memorizing lists of names without a context.
- Preparing for lab practicals using only the figures from your textbook. You need to go to open lab and use the models and histology slides!

Instructor Evaluation:
At week 3, I will submit an anonymous survey to monitor the quality of instruction and ask for suggestions for improvement.

During week 9 of instruction you will be asked by email to evaluate the class instructor and the Teaching Assistants formally. **PLEASE TAKE THE TIME TO FILL IT OUT**, your feedback is really important for the continued improvement of this class.

Disabilities
I am more than willing to meet the special needs of students with disabilities. Please contact me so that appropriate academic adjustments or accommodations can be made.

Plagiarism and cheating: The University's policy on academic honesty will be observed in this class. Plagiarism is the conscious or inadvertent failure to identify the contributions of others. Cheating is falsely passing off the work of others as your own. Neither will be tolerated evidence of either will result in persecution to the furthest extent of the law.

*******Please note: This syllabus is not a contract. Changes to this syllabus may be made during the course of the quarter.**

EVALUATION

The course and lab will be evaluated separately, and evaluations will be based on the scores from exams and homework assignments; in the case of labs, missing sessions will be penalized (see below).

In both cases the final grade will be determined by curve.

Lecture:

- *One* ***midterm,*** and one ***final exam***, **each** of which will be **40%** of the grade.
    - Exams will consist of an objective portion (multiple choice, fill-in, and matching) and a short answer portion.
    - Practice exams will be posted on canvas during the first week of class.
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- **LearnSmart assignments** will be **20%** of the final grade.
    - This consists of assigned reading followed by a quiz to test the knowledge of the material. Failed responses are not counted against you, you just need to keep trying until you get the key concepts right, at which time the assignment is considered complete.
    - The goal is to familiarize students with lecture materials ahead of the corresponding lecture.
    - Assignments for each lecture total 10 points and are calibrated to take about 1 h.
    - Assignments can be started anytime. They are due before the corresponding lecture.
        - Submissions for Lectures 1 and 2 will get 100% credit if submitted by August 7, to give students time to purchase access and sign up for LearnSmart.
        - For assignments corresponding to lectures 3-8, submissions after the corresponding lecture (and before the final exam) will get 50% credit.

The schedule of assignments is laid out in detail below:

Assignment	**Topic**	**Expected time**	**Credit (points)**	**Deadline for full credit* (at 9:00 am)**
Lecture 1	Bone biology	20	3	Mo 8/7
	Axial skeleton	40	7	Mo 8/7
Lecture 2	Appendicular skeleton	30	5	Mo 8/7
	Joints	30	5	Mo 8/7
Lecture 3	Axial muscles	60	10	Mo 8/7
	Appendicular muscles	60	10	We 8/9
Lecture 5	Intro to nervous system	10	1	Mo 8/14
	Brain	40	5	Mo 8/14
	ANS	20	4	Mo 8/14
Lecture 6	Special organs	60	10	Mo 8/21

Lecture 7	Endocrine	45	5	We 8/23
	Reproductive	45	5	We 8/23
Lecture 8	Heart	30	4	Mo 8/28
	Digestive	30	4	Mo 8/28
	Respiratory	20	2	Mo 8/28

- Submissions after deadline and before the final exam get credited 50% of the total point

Active learning assignments: Vocab lists will have active learning assignments for you to complete. To give you credit for this work, the exam will include questions from these assignments.

Lab:

- Attendance is mandatory,
  Failure to attend will be penalized with 2% of the final grade if it happens once, 10% it if happens twice and failing the class if it happens 3 or more times.

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