ANTH 102A: Human Skeletal Biology
University of California, Santa Cruz

Summer Session 1, 2021 (Remote/Zoom)
Live Class on M/W/F 1:00 PM - 3:30 PM

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Graduate Student Instructor:
David Ingleman (he/him/his)
ingleman@ucsc.edu

Read reviews on
ratemyprofesors.com!

Dedicated Student Hours:
M+W 11:00AM to 12:00PM
PREREQUISITES

- ANTH 001 (Introduction to Biological Anthropology)

COURSE DESCRIPTION

Presents basic human osteology allowing students to identify skeletal material by element. Emphasizes the dynamic nature of bone by integrating anatomy with a discussion of bone physiology within the context of the human life cycle.

This course introduces students to the study of human osteology, which provides the foundation for forensic anthropology, paleoanthropology, and bioarchaeology, as well as vertebrate anatomy and zooarchaeology. Researchers working within these anthropological subfields focus on a variety of topics to investigate human behavior and adaptation, population history, and forensic identification. The primary goal of this course is to learn to identify skeletal material by element, by fragmentary evidence, and to know the important anatomical landmarks for each skeletal element. Students will learn about human osteology through lectures, readings, pictures, 3D models, and ½ skeleton models. Students will demonstrate their knowledge of osteology through labeled sketches of skeletal elements, regular quizzes, and a final exam.

Learning Outcomes: By the end of the term, students should be able to:

- **Identify Elements**: Identify skeletal elements, including fragmentary specimens, based on overall morphology and osteological landmarks;
- **Determine Laterality**: Determine the laterality (side of the body) of skeletal elements, including fragmentary specimens, based on overall morphology and osteological landmarks;
- **Identify Landmarks**: Name and identify major osteological landmarks.
How to Be Successful in this Class: Learning osteology demands a unique set of study skills, time management skills, and a willingness to ask for help. If there are aspects of this course that prevent you from learning or exclude you, please tell your instructor as soon as possible. Together we’ll develop strategies to achieve your goals.

Student Hours for Class Statement: For each credit hour of this 5-week accelerated summer course, students should spend about 6 hours per week engaged in learning and assessment (30 hours total per week). For each week, approximately:

- 7.0 hours attending live classes/open labs or viewing recordings, and reviewing slides/transcripts
- 4.0 hours completing assigned readings and watching optional videos
- 16.0 hours studying bone morphology and landmarks using photos, videos, 3D models, and ½ skeleton models, including drawing and labeling bone sketches
- 3.0 hours completing/submitting assignments, virtual lab quizzes, final exam

COURSE MATERIALS

The required e-textbook is:


The Bone Book (Mann 2017) is a suitable alternative.

A life-sized, disarticulated complete or half skeleton model is required for use in sketching bones and studying for lab quizzes. You are eligible for a loan from the Anthropology Department of a half skeleton model. Or, you may purchase a skeleton model independently (typically up to $125 for new and as low as $85 for used on ebay and Amazon.com).

In addition, free streaming videos and 3D virtual models (Sketchfab and apps, such as “Skeleton 3D Anatomy” and “BoneBox – Dental Lite”) can supplement your learning!
COURSE ORGANIZATION

This intensive 5-week course is divided into 9 modules. It is important that you attend live classes (or view the recordings) and complete the assigned readings, as well as study each new bone group and review previously introduced bone groups before attempting the cumulative Lab Quizzes. To efficiently prepare for Lab Quizzes, I recommend first completing the associated Bone Group Sketches. In addition, the following are required:

- one Introduction Discussion Forum post;
- one Exit Survey
- one Attendance at 2 or more live classes or dedicated Student Hours; and
- one Final Exam

Due dates for all Lab Quizzes & the Final Exam are hard deadlines. Due dates for bone group sketches are recommended, with a 1-week grace period (except for Bone Groups 8 & 9). All sketches that are submitted by the recommended deadline will be given priority in grading. Late work will be graded as soon as possible in the order received.

You are invited to attend Virtual Open Lab (during live class) to ask questions or listen to other student questions. Each student is required to attend at least 2 Live Class and/or dedicated Student Hours sessions.

COURSE CONTENT

Content will be introduced as 9 bone groups and presented through two main venues: live lecture/labs (also recorded) and assigned readings. In addition, links to free streaming videos, websites, and apps will be posted. The instructor will answer questions and provide additional resources via an optional Lab Discussion Forum.

Bone Groups: The 9 bone groups are as follows:

- Bone Group 1: Skull Basics & Craniometric Landmarks
- Bone Group 2: Elements of the Skull
- Bone Group 3: Pre-Molar Dentition & Molar Dentition
- Bone Group 4: Vertebrae, Hyoid, Sternum, & Ribs
- Bone Group 5: Shoulder Girdle, Humerus, Radius, & Ulna
- Bone Group 6: Carpals, Metacarpals, & Phalanges
- Bone Group 7: Sacrum, Coccyx, & Os Coxae
- Bone Group 8: Femur, Patella, Tibia, & Fibula
- Bone Group 9: Tarsals, Metatarsals, & Phalanges
**Class Recordings:** Class recordings, to be hosted via YuJa, are designed to introduce osteological terms, describe bone biology, orient the student, and provide tips for learning and mnemonics. Links to videos and slides for each class will be linked. Make sure to watch all of the recordings before starting the associated lab quiz.

**Readings:** Assigned readings provide images and descriptions of skeletal elements to help you memorize bone morphologies and landmarks and provide tips on siding bones. You may more lightly skim sections on measuring bones, as this will not be tested.

**Videos and Websites:** Links to optional streaming videos and websites will be posted on Canvas for each module.

**ASSESSMENTS**

Students can earn credit through 6 venues: 1) Introduction Forum; 2) Attendance; 3) Lab Quizzes; 4) Bone Group Sketches; 5) Exit Survey; and 6) Final Exam. In addition, Extra Credit is available. Rubrics are embedded in each assignment. The lowest Lab Quiz and Bone Group Sketch grades will be dropped. If 70% of the class takes the mid-course survey by July 4, then the 2 lowest quiz grades will be dropped.

**Introduction Forum:** The Introduction Forum is worth 1.0% of your overall grade; and is due June 27. For full credit, in 100 to 250 words do the following:

- Introduce yourself (name, pronouns), tell us why you are taking this course, describe your academic/scholarly interests, and one optional “fun fact” about yourself (e.g., dog lover, speaks 4 languages, favorite movie, learning ukulele, etc.)
- Tell us about one challenge you will face as you complete this course and YOUR REAL and FEASIBLE PLAN how you plan to overcome this.
- In addition, you may provide a “G-rated” photo or link to help us understand.

**Exit Survey:** The Exit Survey is worth 1.0% of your overall grade and is due July 23! For full credit, in 100 to 250 words, describe your learning experience. Did your study plan work? What advice would you give to future students?

**Attendance:** Each student is required to attend at least two Live Class and/or Student Hours session (2.0% of overall grade). If the Live Class and Student Hour times are not convenient, contact your instructor for an accommodation.
**Lab Quizzes:** There are 8 open-book and cumulative lab quizzes, each is worth 5% of your total grade (cumulatively 40%, lowest grade will be dropped). Lab Quizzes will be unlocked on the day the material is presented in class and will generally be available for 7 days (only 5 days for Bone Group 9). **There is no grace period for lab quizzes!** Each Lab Quiz will consist of 10 questions (0.5 points each) asking you to identify bone element and laterality, or to name an osteological landmark or craniometric point on a bone photograph. Spelling counts! **Quizzes are timed (10 minutes total) and can only be submitted once.** Be prepared!

**Bone Group Sketches:** Each of the 9 Bone Group Sketches is worth 4% of your total grade (cumulatively 36%, lowest grade will be dropped). For **EACH BONE** in a bone group, do the following:

- Carefully draw the bone to scale (label the scale 1:1, 1:2, 1:3, etc.) and from a minimum of 2 angles (2 different planes of reference). This means a **minimum of 2 drawings per bone (including each of the bones of the skull)**, and likely more. I recommend using pencil and graph paper.
- For the bones of the skull, you will have to make sketches based on images in the textbook and 3D models, as the bones of the skull are not disarticulated in the ½ skeleton model.
- For all long bones, sketch separate drawings for the proximal portion and the distal portion (**a minimum of two drawings per portion**).
- **Label the element/portion, all diagnostic features, and all morphological indicators discussed in lectures.**
- On your sketch, note the hours that you spend studying each bone or bone portion. You are not graded on your study hours, so be honest!
- Scan or take a clear, legible photo of your sketch and upload it.
- You will be **graded on completeness**, not artistic quality!
- Feel like sharing your sketches? Post them to the Bone Group Sketch Discussion Forum so we can all benefit from your perspective! The sketch with the most “likes” at the end of the course will **earn up to 0.5% extra credit.**
Final Exam: The open-book, cumulative Final Exam will consist of **40 questions** worth 0.5 points each (20% of your overall grade). Final Exam questions will be in the same format as the Lab Quizzes, but will include different specimens. The Final Exam will be available from July 20 to July 23 and can only be submitted once. You will ONLY have **34 minutes** to complete the final exam. Be prepared!

Extra-Credit SET: If the SET completion rate for the class exceeds 80%, then the WHOLE class will get 0.5% extra credit added to their final grade.

COURSE GRADING CRITERIA

<table>
<thead>
<tr>
<th>Assessment (Category)</th>
<th>Points</th>
<th>Quantity</th>
<th>Total %</th>
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</thead>
<tbody>
<tr>
<td>Bone Group Sketches</td>
<td>4.0</td>
<td>9</td>
<td>36.0</td>
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<tr>
<td>Cumulative Lab Quizzes</td>
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<td>40.0</td>
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<td>Live Class/Student Hours Attendance (Other)</td>
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<tr>
<td>Introduction Forum (Other)</td>
<td>1.0</td>
<td>1</td>
<td>1.0</td>
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<tr>
<td>Exit Survey (Other)</td>
<td>1.0</td>
<td>1</td>
<td>1.0</td>
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<tr>
<td>Final Exam</td>
<td>20.0</td>
<td>1</td>
<td>20.0</td>
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<tr>
<td>SET (Extra Credit)</td>
<td>0.5</td>
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<tr>
<td>Most Popular Bone Sketch (Extra Credit)</td>
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<td>0.5</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>101.0</strong></td>
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Grading Scale:
- 97-100: A+
- 94-96: A
- 90-93: A-
- 87-89: B+
- 84-86: B
- 80-83: B-
- 77-79: C+
- 74-76: C
- 70-73: C-
- 67-69: D+
- 64-66: D
- 60-63: D-
- 0 – 59: F
**COURSE POLICIES**

**Communications:** The instructor will check email daily, Monday through Friday, and generally respond to non-emergency emails within about 24 hours. Please DO NOT expect an immediate response to last minute questions. I expect the same from you.

**Student Hours:**
- **Instructor’s Dedicated Student Hours** are 11am to 12 pm for drop-in and by email appointment. To reserve a time slot, add your name to the Google Sheet.

**Late Work:** The course has been designed to allow for maximum flexibility. However, given the difficult and vulnerable circumstances that many students find themselves in, it is possible that additional flexibility can be warranted. Students who might benefit from extra flexibility should contact the instructor, preferably before any unmanageable deadlines, and together we will develop a strategy to facilitate your academic progress.

**Online Behavior:** When communicating with your instructor, teaching assistant, and classmates (via email, the Discussion Forums, etc.), please use proper etiquette and “netiquette”. As a general rule of thumb, err on the side of formality and civility— you will never offend someone by being too formal or kind! Here are other guidelines:

- **Use proper language:** Typos and errors reflect upon you! And this is an academic environment, so please be as professional as possible in your writing. Avoid typing in ALL CAPS; some people read this as aggressive yelling.
- **Address your recipient properly:** Begin emails and Discussion Forum replies with something like “Hello David.”
- **Avoid overuse of emoticons and 'texting' writing:** We all love emoticons, but please use restraint. Just a single tasteful emoticon could be appropriate.

**UNIVERSITY POLICIES**

**Important Summer Session 1, 2021 Deadlines:**
- Last day to Drop: Monday **June 24**
- Request for “W”: Friday, **July 9** (no tuition reversal)
- Change Grade Option: Friday, **July 9**

**DRC Remote Accommodations:** The Disability Resources Center reduces barriers to inclusion and full participation for students with disabilities by providing support to individually determine reasonable academic accommodations. Operations continue via
remote appointments. If you have questions or concerns about exam accommodations or any other disability-related matter, email the DRC Schedulers at drc@ucsc.edu for an appointment.

**Academic Dishonesty:** Academic integrity is the cornerstone of a university education. Academic dishonesty diminishes the university as an institution and all members of the university community. It tarnishes the value of a UCSC degree. All members of the UCSC community have an explicit responsibility to foster an environment of trust, honesty, fairness, respect, and responsibility. All members of the university community are expected to present as their original work only that which is truly their own. All members of the community are expected to report observed instances of cheating, plagiarism, and other forms of academic dishonesty in order to ensure that the integrity of scholarship is valued and preserved at UCSC.

In the event a student is found in violation of the UCSC Academic Integrity policy, he or she may face both academic sanctions imposed by the instructor of record and disciplinary sanctions imposed either by the provost of his or her college or the Academic Tribunal convened to hear the case. Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student’s transcript.

For the full policy and disciplinary procedures on academic dishonesty, refer to the Academic Integrity page at the Division of Undergraduate Education.

**Title IX:** The university cherishes the free and open exchange of ideas and enlargement of knowledge. To maintain this freedom and openness requires objectivity, mutual trust, and confidence; it requires the absence of coercion, intimidation, or exploitation. The principal responsibility for maintaining these conditions must rest upon those members of the university community who exercise most authority and leadership: faculty, managers, and supervisors.

The university has instituted a number of measures designed to protect its community from sex discrimination, sexual harassment, sexual violence, and other related prohibited conduct. Information about the Title IX Office, the online reporting link, applicable campus resources, reporting responsibilities, the UC Policy on Sexual Violence and Sexual Harassment, and the UC Santa Cruz Procedures for Reporting and Responding to Reports of Sexual Violence and Sexual Harassment can be found at titleix.ucsc.edu.

The Title IX Office is actively responding to reports and requests for consultation. If you are not currently working with someone in the office and want to make a report/request a consult, you can expect the fastest response by using our online reporting link.

For more information please visit the Title IX Operations under Covid-19 page.
**LIVE CLASS AGENDA**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>1:00 pm - 1:30 pm</th>
<th>1:30 pm - 3:30 pm</th>
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<tbody>
<tr>
<td>1</td>
<td>June 21 (Monday)</td>
<td>• Introductions &amp; Syllabus</td>
<td>• Open lab</td>
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<td></td>
<td></td>
<td>• Bone Group 1 Lecture</td>
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<td>1</td>
<td>June 23 (Wednesday)</td>
<td>• Bone Group 2 Lecture</td>
<td>• Open lab</td>
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<tr>
<td>1</td>
<td>June 25 (Friday)</td>
<td>• Open lab</td>
<td>• Open lab</td>
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<td>2</td>
<td>June 28 (Monday)</td>
<td>• Bone Group 3 Lecture</td>
<td>• Open lab</td>
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<td>2</td>
<td>June 30 (Wednesday)</td>
<td>• Bone Group 4 Lecture</td>
<td>• Open lab</td>
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<td>2</td>
<td>July 2 (Friday)</td>
<td>• Open lab</td>
<td>• Open lab</td>
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<td>3</td>
<td>July 5 (Monday)</td>
<td><strong><strong>Holiday! No Class!</strong></strong></td>
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<td>3</td>
<td>July 7 (Wednesday)</td>
<td>• Bone Group 5 Lecture</td>
<td>• Open lab</td>
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<td>July 9 (Friday)</td>
<td>• Bone Group 6 Lecture</td>
<td>• Open lab</td>
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<td>4</td>
<td>July 12 (Monday)</td>
<td>• Bone Group 7 Lecture</td>
<td>• Open lab</td>
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<td>4</td>
<td>July 14 (Wednesday)</td>
<td>• Bone Group 8 Lecture</td>
<td>• Open lab</td>
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<td>4</td>
<td>July 16 (Friday)</td>
<td>• Open lab</td>
<td>• Open lab</td>
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<td>5</td>
<td>July 19 (Monday)</td>
<td>• Bone Group 9 Lecture</td>
<td>• Open lab</td>
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<td>5</td>
<td>July 21 (Wednesday)</td>
<td>• Open lab</td>
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<td>5</td>
<td>July 23 (Friday)</td>
<td>• Open lab</td>
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## COURSE SCHEDULE

<table>
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<tr>
<th>Mod.</th>
<th>Live Class Agenda</th>
<th>Assigned Readings</th>
<th>Assignments (<em>Hard Deadline</em>)</th>
</tr>
</thead>
</table>
| 1    | Due June 21 (Mon): Bone Group 1  
- Introduction & Syllabus  
- Directional Terms & Planes of Reference  
- Skull Basics  
- Cranioemeric Landmarks  
- Skull Sutures | Due June 21 (Mon):  
- Chapter 1  
- Chapter 2  
- Part of Chapter 4 (p. 43-59) | Due June 27 (Sun):  
- Introduction Forum  
- Sketches of Bone Group 1  
- Lab Quiz 1 (Bone Group 1)* |
| 2    | Due June 23 (Wed): Bone Group 2  
- Elements of the Skull | Due June 23 (Wed):  
- Chapter 4 (all) | Due June 29 (Tue):  
- Sketches of Bone Group 2  
- Lab Quiz 2 (Bone Groups 1&2)* |
| 3    | Due June 28 (Mon): Bone Group 3  
- Pre-Molar Dentition  
- Molar Dentition | Due June 28 (Mon):  
- Chapter 5 | Due July 4 (Sun):  
- Mid-Course Survey (not graded)  
- Sketches of Bone Group 3  
- Lab Quiz 3 (Bone Groups 1-3)* |
| 4    | Due June 30 (Wed): Bone Group 4  
- Vertebrae  
- Hyoid  
- Sternum and Ribs | Due June 30 (Wed):  
- Chapter 6  
- Chapter 7 | Due July 6 (Tue):  
- Sketches of Bone Group 4  
- Lab Quiz 4 (Bone Groups 1-4)* |
| 5    | Due July 7 (Wed): Bone Group 5  
- Shoulder Girdle  
- Humerus  
- Radius  
- Ulna | Due July 7 (Wed):  
- Chapter 8  
- Chapter 9 | Due July 13 (Tue):  
- Sketches of Bone Group 5  
- Lab Quiz 5 (Bone Groups 1-5)* |
<table>
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<tr>
<th>Mod.</th>
<th>Live Class Agenda</th>
<th>Assigned Readings</th>
<th>Assignments (*Hard Deadline)</th>
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<tr>
<td>6</td>
<td>Due July 9 (Fri): Bone Group 6</td>
<td>Due July 9 (Fri):</td>
<td>Due July 15 (Thur):</td>
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<tr>
<td></td>
<td>• Carpals</td>
<td>• Chapter 10</td>
<td>• Sketches of Bone Group 6</td>
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<td>• Metacarpals</td>
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<td>• Lab Quiz 6 (Bone Groups 1-6)*</td>
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<td>• Phalanges</td>
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<td>7</td>
<td>Due July 12 (Mon): Bone Group 7</td>
<td>Due July 12 (Mon):</td>
<td>Due July 18 (Sun):</td>
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<td>• Sacrum</td>
<td>• Chapter 11</td>
<td>• Sketches of Bone Group 7</td>
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<td>• Coccyx</td>
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<td>• Lab Quiz 7 (Bone Groups 1-7)*</td>
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<td>• Os Coxae</td>
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<td>8</td>
<td>Due July 14 (Wed): Bone Group 8</td>
<td>Due July 14 (Wed):</td>
<td>Due July 20 (Tues):</td>
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<td>• Femur</td>
<td>• Chapter 12</td>
<td>• Sketches of Bone Group 8</td>
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<td>• Patella</td>
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<td>• Lab Quiz 8 (Bone Groups 1-8)*</td>
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<td>• Tibia</td>
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<td>• Fibula</td>
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<td>9</td>
<td>Due July 19 (Mon): Bone Group 9</td>
<td>Due July 19 (Mon):</td>
<td>Due July 23 (Fri):</td>
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<tr>
<td></td>
<td>• Tarsals</td>
<td>• Chapter 13</td>
<td>• Sketches of Bone Group 9</td>
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<td>• Metatarsals</td>
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<td>• Phalanges</td>
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<td>FINAL EXAM (Open July 20 to July 23)</td>
<td>Due July 23 (Fri):</td>
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<td></td>
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<td>• Exit Survey*</td>
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<td>• Final Exam (Bone Groups 1-9)*</td>
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<td>• All outstanding work (e.g., Sketches of Bone Groups 8 &amp; 9)*</td>
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