



COURSE DESCRIPTION

The course encompasses the study and analysis of animal remains from archaeological sites. A major objective of the course is to develop an ability to identify animal species from archaeological remains, and to develop an ability to identify the various bone elements of vertebrate species. Course content will emphasize North American terrestrial mammals from the department comparative collections, particularly bison, but other groups such as fish, birds and marine mammals will also be included. The main component of the course will be a study of the techniques that may be employed to analyze animal bones once they have been identified. Techniques discussed include various quantification techniques, aging and sexing analysis, butchering pattern analysis, seasonality, and a consideration of the various cultural and natural taphonomic factors that affect archaeological remains. We will also consider the implications these analyses for assessing social phenomena such as subsistence strategies, status, and ceremonial usage.

Office: ES 818

Office Hours: T 11:00-12:30 and by appointment

EMAIL: ELIZABETH.PARIS@UCALGARY.CA

TA: Margaret Patton

TA Office Hours: T 12:30-14:00 pm

TA Email: mpatton@ucalgary.ca

Any emailed questions should be first directed to the TA, and will be referred to the instructor as necessary. Please expect 48 hours for a response. If more than 48 hours have passed with no reply, check the email address and re-send. Please use your UCalgary email address for course business.

REQUIRED READINGS

Course textbooks:

- Elizabeth Reitz and Elizabeth Wing. 2008. *Zooarchaeology* (Second Edition). Cambridge University Press.
- B. Miles Gilbert. 1980 *Mammalian Osteology*. Missouri Archaeological Society Columbia, MO.
- Debbi Lee Cannon. 1987. *Marine Fish Osteology: A Manual for Archaeologists*. Department of Archaeology, Simon Fraser University (ebook).

Suggested additional textbooks, depending on your region of focus:

- Olsen, Stanley J. 1960 *Post-Cranial Skeletal Characters of Bison and Bos*. Papers of the Peabody Museum of Archaeology & Ethnology, Volume 35. Harvard University, Cambridge (optional)
- Olsen, Stanley J. 1982 *An Osteology of Some Maya Mammals*. Papers of the Peabody Museum of Archaeology & Ethnology, Volume 73. Harvard University, Cambridge (optional)

Additional readings and resources will be listed on D2L. PDF copies and links to articles, book chapters and videos will be posted on D2L in modules that correspond to the week in which they are due.

All readings are required! Please check the schedule below for readings and due dates.

WHAT WILL YOU LEARN?

By the end of this course, students will be expected to:

- Discuss the historical development of the field of zooarchaeology, including theoretical approaches and methods.
- Explain the basic osteology and environmental biology concepts that underlie the identification of faunal remains.
- Apply zooarchaeological data to research questions and problems in anthropological archaeology.
- Apply zooarchaeological methods, techniques and concepts through lab exercises, including research design and sampling, identifications, data recording and entry, data analysis, and report preparation.
- Have attained a baseline of proficiency in the field of zooarchaeological analysis that can provide the foundation for more advanced experiences and independent research.

COURSE STRUCTURE

Grades will be based on the following course activities:

1.	Attendance and participation	15%	See schedule
2.	Discussion Leadership	5%	Individual due dates
3.	Practice Labs	20%	See schedule
4.	Bone identification Quizzes	20%	See schedule
5.	Bison Analysis Final Project	20%	Portions due Oct. 26 and Nov. 7
6.	NiTs Analysis Final Project	20%	Portions due Nov. 30 and Dec. 7

NOTE: There is no registrar-scheduled final examination for this course.

In this class, grades are assigned according to the following chart:

Percentages	Letter grade	Interpretation
97-100%	A+	<i>The A range denotes excellent performance.</i>
90-96%	A	
86-89%	A-	
82-85%	B+	<i>The B range denotes good performance.</i>
78-81%	B	
74-77%	B-	
70-73%	C+	<i>The C range denotes satisfactory performance.</i>
66-69%	C	
62-65%	C-	
56-61%	D+	<i>The D range denotes unsatisfactory performance.</i>
50-55%	D	
<50%	F	<i>An F denotes failing performance.</i>

EVALUATION METHODS

While there are two scheduled time blocks for lecture and lab for this class, in reality, there will be less of a separation between the activities of lectures vs. labs than the scheduling would suggest. You will be expected to attend both portions of the class, and participate fully in all aspects of the class, no matter when they are scheduled.

1. ATTENDANCE AND PARTICIPATION (15%)

This course will be in a seminar format, and students will be graded for their participation in in-class discussions and activities.

- Grading for "participation" assumes that you come to class regularly and on time, ready to talk about the required reading/assignments, and to participate in the lab activities. Your in-class comments during discussion should demonstrate to me that you have done the readings and thought seriously about them. You must also follow the rules of course etiquette (see below).
- Your participation grade will also include your participation in lab activities. This includes full participation in activity-based labs, and meeting progress goals for the Bison and NiTs projects.
- Participation grades for each course meeting will be assessed through a "check-plus/check/check-minus/absent" system with a corresponding number of points (4-3-2-0), and will be assessed as a proportion of the total number of possible points. You will receive a separate grade for the completion of practice labs, including project trays.
- If you find you are having difficulties in class, please come and see myself or the TA early in the semester to work on them. It will be hard to turn things around if you wait until the last two weeks of class to seek help.

2. DISCUSSION LEADERSHIP (5%)

On the first day of class, you will sign up to lead one discussion for the class. Depending on enrollment, you will sign up singly or in pairs. Each student will be responsible for leading the discussion on the assigned course readings for that day. Additionally, each student will be responsible for finding and reading a scholarly article, book, or book chapter relating to the theme of the discussion. Students will send the UCalgary library link or PDF file to the instructor 48 hours prior to the course meeting to create a class resource library on D2L. Each student will also briefly summarize their article during their assigned course meeting. Students will be evaluated based on the appropriateness of the article for the topic, the quality of the article, and the quality of the in-class summary.

3. PRACTICE LABS (20%)

There will be Practice labs scheduled throughout the semester (see schedule). For some practice labs, you will be responsible for turning in a worksheet at the end of class that is specific to the lab itself, and marks will be assigned as a proportion of correctly answered questions. In other cases, you will be given in-class time to complete the Bison or NiTs projects. Announcements will be made on the number of element identifications that must be made and turned in for grading at the end of the lab. In these cases, you will be graded as a proportion of the number of identifications completed correctly as a proportion of the number assigned for the lab period in question. In total, the Practice Labs will constitute 20 percent of your final grade.

4. BONE IDENTIFICATION QUIZZES (20%)

There will be four quizzes in the course. Please see the course schedule below; most quizzes will be scheduled for the first portion of the class meeting. The quizzes will require you to apply the knowledge

that you have learned from lectures and practice labs to a set of unlabeled specimens. Each quiz will be worth 5 percent of your grade, and collectively, quizzes represent a total of 20 percent of your final grade.

5. BISON PROJECT AND NiTs PROJECTS (20% each)

You will complete two analysis projects in this course, in order to simulate the type of investigation that you would be expected to perform as a faunal analyst for a professional research project in archaeology, whether in academia or the public sector. For this project, you will analyze an actual sample of archaeological specimens. You must hand in a research report that contains a full analysis of your sample, using the techniques that have been taught throughout the class.

You will receive separate project handouts with the specifications for each assignment. Make sure to follow the directions very carefully in order to receive credit.

Please note that you will receive some class time to complete the projects, but you should also arrange to spend extra time outside of class to complete your analysis. Access to the lab spaces may be arranged during instructor/TA office hours. You may email the instructor or TA to ask if they are willing to supervise at other times, but this is not guaranteed, and completely subject to instructor/TA availability and discretion.

Removing skeletal remains from laboratory spaces is not permitted for any reason. This includes materials assigned for projects and comparative collections. Removing course materials or damaging collections will be reported to the university as misconduct.

ATTENDANCE AND MAKEUP POLICY

Attendance and Participation: Each student is allowed one absence without penalty. There are 25 total course meetings, meaning that your attendance will be calculated as a specific proportion of 25 meetings. Two late arrivals (i.e., walking into class after attendance has been taken) will count as one absence when calculating attendance. I take attendance at the beginning of class. Where students have absences with an official university excuse, the grade will be calculated as a proportion from the course meetings attended.

Labs and Quizzes: Rescheduling of examples labs, practice labs, and quizzes is extremely difficult due to their involved nature. Official excused absences must be reported to the instructor and TA as soon as possible, and students will need to be flexible and work with us for any attempts to reschedule.

Projects: Project may only be turned in late with an official excuse as per university policy. As it is possible to turn in written assignments prior to the due date, foreseen schedule conflicts resulting from university athletic competitions, religious observances, etc. must be arranged individually with the professor in advance. Unforeseen emergency or situations should be reported to the professor as soon as possible, and any alternative arrangements will be based on individual circumstances.

COURSE SCHEDULE

Students should do all readings and assignments during the week in which they are assigned.

**Note that this syllabus is subject to change at any time at the professor's discretion.

WEEK	DUE DATE	TOPICS AND READINGS
Week 1	T, Sept. 12	Topic: Introduction to the course, Basic Concepts: Taxonomy and Planes of the Body
	R, Sept 14	Topic: Comparative mammalian anatomy Read: R&W, Chapters 1 to 3, Gilbert pp. 32-55
Week 2	T, Sept. 19	Topic: Dog Anatomy Read: R&W Chapter 4, Gilbert pp. 66-67 Review: Gilbert p. 32-55 LAB: Dog anatomy
	R, Sept. 21	Topic: Bison (Axial) LAB: Bison Project given out, Bison Project Day 1
Week 3	T, Sept. 26	Quiz 1: Dog Anatomy Topic: Bison (Apendicular) Topic: Bison, Ungulates, and semi-digitigrades Read: Gilbert pp. 56-62 LAB: Comparative mammalian anatomy, Bison Project Day 2
	R, Sept. 28	Topic: Taphonomy Read: R&W Chapter 5, Gilbert pp. 7-26, Lyman 1984 LAB: Taphonomy, Bison Project Day 3
Week 4	T, Oct. 3	Topic: Quantification I (NISP, MNI and MNE) Read: R&W Chapter 6 Discussion Leader(s): LAB: Quantitative Methods in Faunal Analysis, Bison Project Day 4
	R, Oct. 5	Topic: Quantification II (Diversity and Equity) Read: R&W Chapter 7 Discussion Leader(s): LAB: Quantitative Methods in Faunal Analysis, Bison Project Day 5
Week 5	T, Oct. 10	Quiz 2: Bison Anatomy Topic: Aging and Sexing (Mammals) Read: Gilbert pp. 63-65, 100—109, 152-159, Bedord 1978, Walde 2004 LAB: Aging and Sexing of Bison, Bison Project Day 6
	R, Oct. 12	Topic: Butchering and Human Alteration Read: Gilbert 1990 pp. 7-30 Discussion Leader(s): LAB: Butchering Project I (Bison Project Day 7)

Week 6	T, Oct. 17	<p>Topic: Fragmentary Specimens</p> <p>Review: R&W Chapter 5</p> <p>Discussion Leader(s):</p> <p>LAB: Butchering Project II (Bison Project Day 8)</p>
	R, Oct. 19	<p>Topic: Bone Tools</p> <p>Read: Backwell et al. 2008</p> <p>Discussion Leader(s):</p> <p>LAB: Bison Project Day 9</p>
Week 7	T, Oct. 24	<p>Quiz 3: Bison Fragments</p> <p>Topic: Mobility and Seasonality</p> <p>Read: R&W Chapter 8</p> <p>Discussion Leader(s):</p> <p>LAB: Bison Project Day 10</p>
	R, Oct. 26	<p>Topic: Domestication and Husbandry</p> <p>Read: R&W Chapter 9, Crabtree 1993</p> <p>Discussion Leader(s):</p> <p>LAB: Bison Project Day 11</p> <p>Bison Project Basics DUE on D2L at 11:59 PM</p>
Week 8	T, Oct. 31	<p>Topic: Human Effects on the Environment</p> <p>Read: R&W Chapter 10</p> <p>Discussion Leader(s):</p> <p>LAB: Bison Project Day 12</p>
	R, Nov. 2	<p>QUIZ 3: Bison Fragments</p> <p>Topic: Mesoamerican fauna</p> <p>Read: Masson and Peraza Lope 2008</p> <p>Discussion Leader(s):</p> <p>LAB: Bison Project Day 13</p>
Week 9	T, Nov. 7	<p>Topic: Marine mammals</p> <p>Read: Erlandson 2001</p> <p>Discussion Leader(s):</p> <p>LAB: Distribution of NiTs Projects</p> <p>Bison Project Final DUE on D2L at 11:59 PM</p>
	R, Nov. 9	MID-TERM BREAK
Week 10	T, Nov. 14	<p>Topic: Seal Anatomy</p> <p>Topic: Marine Fishing and Hunting</p> <p>Read: Lyman et al. 1992</p> <p>Discussion Leader(s):</p> <p>LAB: Seal anatomy, NiTs Project Day 1</p>

Week 11	R, Nov. 16	<p>Topic: Fish</p> <p>Read: Colley 1990</p> <p>Discussion Leader(s):</p> <p>LAB: Fish Anatomy, NiTs Project Day 2</p>
	T, Nov. 21	<p>Topic: Birds</p> <p>Read: Gilbert pp.3-6, 31-35</p> <p>Discussion Leader(s):</p> <p>LAB: NiTs Project Day 3</p>
Week 12	R, Nov. 23	<p>Topic: Birds II</p> <p>Read: Newbold et al. 2012</p> <p>Discussion Leader(s):</p> <p>LAB: Bird Anatomy, NiTs Project Day 4</p>
	T, Nov. 28	<p>Topic: Reptiles and Amphibians</p> <p>Read: Westaway et al. 2011</p> <p>Discussion Leader(s):</p> <p>LAB: NiTs Project Day 5</p>
Week 13	R, Nov. 30	<p>Topic: Molluscan Seashells and Crustaceans</p> <p>Discussion Leader(s): Giovas 2009</p> <p>LAB: Shell Anatomy</p> <p>LAB: NiTs Project Day 6</p> <p>NiTs Project Basics DUE on D2L at 11:59 pm</p>
	T, Dec. 4	<p>Quiz 4: Bird/Fish/Seal Anatomy</p> <p>Topic: Status, Privilege, Trade and Exchange of Animal Products</p> <p>Read: deFrance 2009</p> <p>Discussion Leader(s):</p> <p>LAB: NiTs Project Day 7</p>
	R, Dec. 6	<p>Topic: Animal Use in Rituals and Sacrifice</p> <p>Read: Emery 2002</p> <p>Discussion Leader(s):</p> <p>LAB: NiT Project Day 8</p>
	F, Dec. 7	<p>NiTs Project Final DUE on D2L at 11:59 pm</p>

CLASSROOM ETIQUETTE

- Please make this class a scheduling priority. It is important to arrive on time. Please only leave class before the end of the period if there is an emergency, in which case, please notify the instructor as soon as possible. We will schedule a *short* break during the lab, but if you need to use the restroom or grab a drink of water, please do so quietly and discretely. However, you may not leave the room during a scheduled lab quiz, for academic honesty reasons.
- Faunal specimens may not be removed from the labs and prep rooms in which they are stored.
- Food is not permitted in lab classes, because it can leave damaging residues on artifacts and analysis surfaces. You may bring a drink in a sealed, non-spill container, which you should keep stowed whenever we handle specimens. This is a long seminar with a substantial lab component, so plan accordingly. If you anticipate being hungry, please eat before coming to class.
- This class includes lab activities that have mild safety risks, that could involve the use of metal and stone cutting implements. By remaining in the class, you agree to promptly follow all safety instructions from the professor and teaching assistant. Unsafe behavior will not be tolerated, and may result in your removal from the class.
- Students are required to remain and assist with clean-up activities following labs, as directed by the instructor and TA.
- Treat everyone in the class as a colleague—show respect to both your fellow students and myself, even if you strongly disagree with someone’s opinion. Be friendly, courteous and kind during discussions. Do not talk over or interrupt the instructor or other students.
- Silence and stow your phones, and do not use them during class. They are distracting to everyone.
- Only use laptops and tablets for note-taking purposes. Using them for other activities is highly distracting. If I observe that your laptop or tablet is distracting your fellow students, I will ask you to place it on the podium, and you will lose participation points for that day.
- Course materials prepared by the instructor, together with the content of all lectures presented by the instructor, are the property of the instructor. You may not make video and audio recordings of lectures and labs without the explicit consent of the instructor, nor transfer them to another student, whether or not that student is enrolled in the course.

PLAGIARISM AND CHEATING

Plagiarism: “to steal and pass off the ideas or words of another as one’s own” (Webster’s). Plagiarism will not be tolerated and will automatically result in a failing grade for the submission. Any student caught plagiarizing will also be subject to additional University sanctions. Students are expected to be familiar with the Department of Anthropology and Archaeology’s policy on intellectual honesty

DEFERRED EXAMS:

A student who is absent from a test for legitimate reasons must discuss an alternative course of action with the instructor. The instructor at their discretion may transfer the percentage weight for the test to the final examination, if there is a final examination in the course, set another test, etc. An instructor will normally make this decision on the basis of verbal information provided by the student. In the event that an instructor feels that they cannot judge the veracity of the information provided, Students must be aware that they are responsible for payment of any charge associated with the medical assessment and documentation as this service falls outside the realm of services provided by the Provincial Health Care Plan. Deferral of the final exam requires Registrar approval.

ACADEMIC ACCOMMODATIONS

<http://www.ucalgary.ca/access/accommodations/policy>

Students needing an Accommodation because of a Disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities
Students needing an Accommodation based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the instructor of this course.

ACADEMIC INTEGRITY

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Calgary is a strong signal of each student's individual academic achievements. As a result, the University treats cases of cheating and plagiarism very seriously. Non-academic integrity also constitutes an important component of this program.

For detailed information on what constitutes academic and non-academic misconduct, please refer to the following link: <http://www.ucalgary.ca/pubs/calendar/current/k-2-1.html>

All suspected cases of academic and non-academic misconduct will be investigated following procedures outlined in the University Calendar. If you have questions or concerns about what constitutes appropriate academic behavior or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources.

Where there is a criminal act involved in plagiarism, cheating or other academic misconduct, e.g., theft (taking another student's paper from their possession, or from the possession of a faculty member without permission), breaking and entering (forcibly entering an office to gain access to papers, grades or records), forgery, personation and conspiracy (impersonating another student by agreement and writing their paper) and other such offences under the Criminal Code of Canada, the University may take legal advice on the appropriate response and, where appropriate, refer the matter to the police, in addition to or in substitution for any action taken under these regulations by the University

TEACHING EVALUATIONS / USRI (Universal Student Ratings of Instruction)

At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. **Your responses make a difference, please participate!**
Website: <http://www.ucalgary.ca/usri/>

Writing Across the Curriculum

Writing skills are not exclusive to English courses and, in fact, should cross all disciplines. The University supports the belief that throughout their University careers, students should be taught how to write well so that when they graduate their writing abilities will be far above the minimal standards required at entrance. Consistent with this belief, students are expected to do a substantial amount of writing in their University courses and, where appropriate, members of faculty can and should use writing and the grading thereof as a factor in the evaluation of student work. The services provided by the Writing Support, part of the Student Success Centre, can be utilized by all undergraduate and graduate students who feel they require further assistance

Emergency Evacuation Assembly Points: In the event of an emergency that requires evacuation, please refer to the following link to become familiar with the assembly points for the class:

<http://www.ucalgary.ca/emergencyplan/assemblypoints>

Freedom of Information and Protection of Privacy Act: Freedom of Information and Protection of Privacy Act

The University of Calgary is committed to protecting the privacy of individuals who work and study at the University or who otherwise interact with the University in accordance with the standards set out in

the Freedom of Information and Protection of Privacy Act. Please refer to the following link for detailed information: <http://www.ucalgary.ca/legalservices/foip>

The Department of Anthropology and Archaeology's FOIP (Freedom of Information and Privacy) policy requires all reports/examinations to be returned to students during class time or the instructor's office hours. Any term work not picked up will be placed in the Anthropology and Archaeology Office (ES620) for distribution. Any student not wishing to have their work placed in the office must make alternative arrangements with the course instructor early in the term.

Safewalk Information: Campus Security, in partnership with the Students' Union, provides the Safewalk service, 24 hours a day to any location on Campus including the LRT, parking lots, bus zones and University residences. Contact Campus Security at (403) 220-5333 or use a help phone, and Safewalkers or a Campus Security Officer will accompany you to your campus destination.

Faculty of Arts Program Advising and Student Information Resources: Have a question, but not sure where to start? Arts Students' Centre

The Faculty of Arts Students' Centre is the overall headquarters for undergraduate programs in the Faculty of Arts. The key objective of this office is to connect students with whatever academic assistance that they require.

In addition to housing the Associate Dean, Undergraduate Programs and Student Affairs and the Associate Dean for Teaching and Learning, the Arts Students' Centre is the specific home to:

- program advising
- the Faculty's Co-operative Education Program
- the Arts and Science Honours Academy
- the Faculty's Interdisciplinary Programs
- a Student Help Desk

Location: Social Sciences Room 102

Phone: 403.220.3580

Email: ascarts@ucalgary.ca

Website: arts.ucalgary.ca/undergraduate/

For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at (403) 210-ROCK [7625] or visit them at the MacKimmie Library Block.

Contacts for Students Union Representatives for the Faculty of Arts:

arts1@su.ucalgary.ca

arts2@su.ucalgary.ca

arts3@su.ucalgary.ca

arts4@su.ucalgary.ca

Ombudsman's office: <http://www.ucalgary.ca/ombuds/>