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**ARKY 531.10**  
**Advanced Topics in Archaeology (GIS in Archaeology)**  
**H(3-0)**

<b>Instructor:</b>	Dr. Rémi Méreuze	<b>Lecture Location:</b>	ES 702
<b>Phone:</b>		<b>Lecture Days/Time:</b>	TR 11:00-12:15
<b>Email:</b>	<a href="mailto:remi.mereuze@ucalgary.ca">remi.mereuze@ucalgary.ca</a>		
<b>Office:</b>	ES 840		
<b>Office Hours:</b>	R 13:30-15:30		

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**Prerequisite(s):** Department consent.

**COURSE DESCRIPTION**

This course is a practical introduction to the use of Geographic Information Systems (GIS) in archaeology. There is no prior knowledge or GIS experience needed for this course. We will use QGIS – an open source GIS software which has a big community for support, help forums, and plugin development. The course will cover the basics of GIS – such as data organization and management, the nature of geospatial information, and practices for recording and figuration through maps. The aim is for students to be able to identify the different types of data they have, what they need and how to record and figure them. At the end of the class, students will be able to build a GIS project, from data acquisition to basic analysis and map production.

**LEARNING OUTCOMES:**

The Department of Anthropology and Archaeology is committed to student knowledge and skill development. In this course, students will:

- Develop an understanding of spatial information in archaeology.
- Learn methods for expressing and recording spatial information
- Build an ability to interpret and critically analyze data displayed on a map
- Practice performing a variety of spatial analyses
- Enhance proficiency in production of maps and other graphics
- Learn how to strategically organize data in a way that reflects a conceptual understanding of archaeological fieldwork.

## READINGS AND TEXTBOOKS:

There is no textbook for this course. Teaching support material (presentations, further explanations on the techniques used in class) will be posted after each class on D2L.

## REQUIRED TECHNOLOGY and EQUIPMENT:

- Students must have access to and **bring a computer to every class** (Windows, Mac or Linux) with an internet connection and updated browser to access D2L, a word processor and a spreadsheet program (Microsoft Office or LibreOffice). QGIS (latest version, <https://www.qgis.org/en/site/forusers/download.html>) should be installed prior to the first class.

## COURSE REQUIREMENTS AND ASSESSMENT

Seminar Participation	30%	(see below for sub-components)
Mid-Term Exam	30%	(in class) 2023/02/16 11:00
Personal project	40%	Due 2023/04/11 20:00

Seminar Participation: Participation is an important feature of successful seminars. We will take an exercise and problem-oriented approach; each week, we will work together in the classroom to find GIS solutions to common archaeological tasks. Some exercises will be individual, and other will require group work – together we will hold discussion on how to improve projects and solutions. Students will be evaluated on in-class participation and peer support in these exercises, which will cumulatively account for 10% of the mark. The remainder of the participation mark (20%) will consist of a portfolio each student will maintain through D2L. Rubrics and instructions for the portfolio will be introduced in class. Each week, students will add to their portfolio the work that they have developed individually and as group. The portfolio is an important of class participation, but will also be a valuable material that students can submit with job applications.

Mid-term exam: The mid-term exam will be in-class, consisting of multiple choice and short written answer questions. The exam is worth 30%, and will cover the content from the first 11 seminars, dealing primarily with the basics of GIS practice. Aids such as course notes are not permitted during the exam.

Personal project: The personal project is worth 40% of the course mark. During the course, we will be working on spatial data and GIS management, but also the procedure to set up personal projects. The projects will be discussed throughout the first sessions as students are guided towards a topic of choice. Rubrics and instructions will be presented in class, and students are encouraged to meet with the instructor early in the semester to start planning. The project will demonstrate three skills: 1) the ability to record data, 2) the ability to perform basic spatial analysis, and 3) produce maps and other spatial visualizations. The last sessions of the course schedule will focus on project development, we will work together on how to run a build them.

These will be concluded with two sessions during which students will present their projects to the class. The projects files and folders are due April 11, at 20:00 pm, on 2DL.

Missed examinations/tests cannot be made up without the approval of the instructor. Exams may only be deferred in the case of serious illness or medical emergency, religious observance, or domestic affliction (see: <https://www.ucalgary.ca/registrar/exams/deferred-final-exams>). Students who miss a test/exam have up to **48 hours** to contact the instructor to ask for a makeup test/exam. Students who do not schedule a makeup test/exam with the instructor within this 48-hour period forfeit the right to a makeup test/exam. Makeup tests/exams may differ significantly (in form and/or content) from the regularly scheduled test/exam [**good to specify how, if you know**]. Once approved by the instructor a makeup test/exam must be written within **two weeks** of the missed test/exam on a day/time scheduled by the instructor.

Deferral of the registrar-scheduled final exam requires Registrar approval  
<https://www.ucalgary.ca/registrar/exams/deferred-final-exams>

*For written assignments:* Late assignments will be penalized 5% per day, including holidays and weekends. All assignments must be submitted to the Dropbox on D2L.

*Regarding documentation:* Students may provide supporting documentation for an exemption/special request. This may include, but is not limited to, a prolonged absence from a course where participation is required, a missed course assessment, a deferred examination, or an appeal. Students are encouraged to submit documentation that will support their situation. The decision to provide supporting documentation that best suits the situation is at the discretion of the student. Students cannot be required to provide specific supporting documentation, such as a medical note. Falsification of any supporting documentation will be taken very seriously and may result in disciplinary action through the Academic Discipline regulations or the Student Non-Academic Misconduct policy.

**Reappraisal of Graded Term Work:** <http://www.ucalgary.ca/pubs/calendar/current/i-2.html>

**Reappraisal of Final Grade:** <http://www.ucalgary.ca/pubs/calendar/current/i-3.html>

**Department of Anthropology and Archaeology Grading Scheme:**

A+	95 – 100%	B+	80 – 84.9%	C+	67 – 70.9%	D+	55 – 58.9%
A	90 – 94.9%	B	75 – 79.9%	C	63 – 66.9%	D	50 – 54.9%
A-	85 – 89.9%	B-	71 – 74.9%	C-	59 – 62.9%	F	< 50%

***\*\*Please note that no extra credit or 'make up' work is available in this class\*\****  
***You do not need to pass each course component to earn a passing grade in the class***

### **Land Acknowledgement**

The Department of Anthropology and Archaeology acknowledges the traditional territories of the people of the Treaty 7 region in Southern Alberta, which includes the Blackfoot Confederacy (comprising the Siksika, Piikani, and Kainai First Nations), as well as the Tsuut'ina First Nation, and the Stoney Nakoda (including the Chiniki, Bearspaw, and Wesley First Nations). The City of Calgary is also home to Métis Nation of Alberta, Region 3.

### **Acknowledgment and Respect for Diversity**

The Department of Anthropology and Archaeology views diversity of identity as a strength and resource. Your experiences and different perspectives are encouraged and add to a rich learning environment that fosters critical thought through respectful discussion and inclusion.

## **COURSE POLICIES**

Course Content & Human Remains: Please be aware that due to the content of the course, depictions of human remains will be a regular part of both the lectures and readings.

Communication: PLEASE include the word ARKY 531 in the title of any email messages. Please keep messages as concise as possible, and I will try to respond within 2 working days.

Instructor office hours are divided into timeslots and you must schedule an appointment within these (they are not drop in sessions). If you are unable to attend the scheduled office hours due to conflict but would still like to meet, we can schedule an appointment.

## **UNIVERSITY POLICIES**

### **ACADEMIC ACCOMMODATIONS**

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit <https://live-ucalgary.ucalgary.ca/student-services/access>. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor or the Department Head. The full policy on Student Accommodations is available at <https://www.ucalgary.ca/legal-services/university-policies-procedures/accommodation-students-disabilities-procedure>.

### **ACADEMIC INTEGRITY POLICY**

Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. The University Calendar includes a statement on the principles

of conduct expected of all members of the university community (including students, faculty, administrators, any category of staff, practicum supervisors, and volunteers), whether on or off university property. This statement applies in all situations where members of the university community are acting in their university capacities. All members of the university community have a responsibility to familiarize themselves with the principles of conduct statement, which is available at: [www.ucalgary.ca/pubs/calendar/current/k.html](http://www.ucalgary.ca/pubs/calendar/current/k.html).

### **ACADEMIC MISCONDUCT**

The University of Calgary is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect.

Academic dishonesty is not an acceptable activity at the University of Calgary, and students are **strongly advised** to read the Student Misconduct section in the University Calendar at: [www.ucalgary.ca/pubs/calendar/current/k-3.html](http://www.ucalgary.ca/pubs/calendar/current/k-3.html). Often, students are unaware of what constitutes academic dishonesty or plagiarism. The most common are (1) presenting another student's work as your own, (2) presenting an author's work or ideas as your own without adequate citation, and (3) using work completed for another course. Such activities will not be tolerated in this course, and students suspected of academic misconduct will be dealt with according to the procedures outlined in the calendar at: <https://www.ucalgary.ca/legal-services/university-policies-procedures/student-academic-misconduct-procedure>

For students wishing to know more about what constitutes plagiarism and how to properly cite the work of others, the Department of Geography recommends that they attend Academic Integrity workshops offered through the Student Success Centre: <https://www.ucalgary.ca/student-services/student-success/learning/academic-integrity>

### **INSTRUCTOR INTELLECTUAL PROPERTY**

Course materials created by professor(s) (including course outlines, presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the professor(s). These materials may NOT be reproduced, redistributed or copied without the explicit consent of the professor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing. Information on Instructor Intellectual Property can be found at <https://www.ucalgary.ca/legal-services/university-policies-procedures/intellectual-property-policy>

### **FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT**

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.

## COPYRIGHT LEGISLATION

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (<https://ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy>) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorized sharing of course materials (including instructor notes, electronic versions of textbooks, etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

## SUPPORTS FOR STUDENT LEARNING, SUCCESS, AND SAFETY

Please visit the Registrar's website at: <https://www.ucalgary.ca/registrar/registration/course-outlines> for additional important information on the following:

- Wellness and Mental Health Resources
- Student Success Centre
- Student Ombuds Office
- Student Union (SU) Information
- Graduate Students' Association (GSA) Information
- Emergency Evacuation/Assembly Points
- Safewalk

## TENTATIVE CLASS SCHEDULE

Date	
T Jan 10	Introduction to GIS and QGIS
R Jan 12	Loading and organizing layers
T Jan 17	Geodesic systems and finding a projection
R Jan 19	Checking, correcting and converting projections
T Jan 24	Data formats and conversions / Geopackage organization
R Jan 26	Getting data from internet (and people)
T Jan 31	Working with the attribute table
R Feb 2	CSV, spreadsheets, GPS data
T Feb 7	Georeferencing maps and aerial pictures
R Feb 9	Digitizing
T Feb 14	Maps production
R Feb 16	Mid-term in class exam
Feb 19-25	Term break
T Feb 28	Forms
R Mar 2	Working with attribute table 2 (even more fun)
T Mar 7	Density maps
R Mar 9	Kernel analysis
T Mar 14	DEM - import
R Mar 16	DEM visualization, extraction and merging

T Mar 21	Line levels and profiles
R Mar 23	Map production
T Mar 28	Personal projects
R Mar 30	Personal projects
T Apr 4	Personal projects
R Apr 6	Projects presentations to the class
T Apr 11	Projects presentations to the class

### **IMPORTANT DATES**

M Jan 9	First day of Winter Term lectures
R Jan 19	Last day to drop a class without a financial penalty
F Jan 20	Last day to add or swap a course
F Jan 27	Fee payment deadline for Winter Term full and half courses.
Feb 20-24	Reading Break. No classes.
F Apr 7	Good Friday, University closed. No classes.
M Apr 10	Easter Monday, University closed. No classes.
W Apr 12	Winter Term Lectures End. Last day to withdraw with permission from Winter Term half courses.
Apr 15-26	Winter Final Exam Period

<https://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html#fall2017>