

# LITHIC ANALYSIS

Term 2, 2022-2023

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**Lab:** Monday 2.30–5.20 pm, KTH B122

**Office Hours:** email to arrange a Zoom meeting

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## **Course Description**

This course focuses on humankind's earliest technology, providing a globally applicable approach to the theories and methods used by archaeologists to analyse stone tools and the debates these data contribute to. The class is hands-on and experiential, involving individual, and group work, dealing with experimental, and archaeological materials.

## **Course Objectives**

The class has a strong hands-on component, with the student gaining skills in materials and artefact identification and analysis. The class is underpinned by an anthropologically and theoretically driven consideration of practice and tradition, from the significance accorded 'natural' resources and their procurement, via how we conceptualise the circulation and exchange of materials and objects, to how we understand the choices made by ancient stone workers.

In this course we cover 3.4 million years of human activity from our earliest ancestors onwards, engaging with such debates and skill sets as:

- 'To make stone tools is to be human': lithic technology and the origins of humanity.
- Experimental stone knapping, and artefact documentation.
- How are stone tools made, and how can we archaeologically recognise them?
- What raw materials were used, and what influenced their selection?
- Raw material heat treatment experiment.
- What were stone tools used for, and how can we tell?
- Experimental tool use and analysis.
- Stone tools as social media.
- Projectiles: a history of spear- and arrowhead production, and how to distinguish them.
- The organisation of stone tool production as an index of socio-economic complexity.
- Raw material sourcing: the methods we use, and what we can do with the data.
- Working with scientific data from the McMaster Archaeological XRF Lab.

At the end of this course, you should thus have developed:

1. An understanding of the information an archaeologist gets from the study of stone tools, and the debates in anthropological archaeology such data can contribute to.
2. The basic skills to recognise and analyse stone tools.
3. Experience in designing and carrying out experiments, critically evaluating the results, and the text- and image-based reportage of such work.
4. Teamwork and presentations.

To satisfy the course's pedagogical aims, all labs, experiments, bell-ringer tests, and reports must be completed.

## **Required Materials and Texts**

**NO TEXTBOOK!** – I will not be using a textbook for reasons I will detail in class.

## **Class Format**

**Lecture / lab / seminar:** Mondays 2.30 – 5.20 pm; *Weekly Details* information provided in that week's content folder on A2L.

## **Course Evaluation – Overview**

Weekly lecture/seminar/lab attendance and participation are **mandatory** grades are not reweighted if missed (see below).

Bell-ringer exams (n=2)	-	20% (10% for each)
Response papers (n=3)	-	20% (5-10% for each)
Project reports (n=7)	-	60% (5-10% for each)

## **Course Evaluation – Details**

***Bell-ringer exams (20%)*** – grade based on student answering a set number of artefact-related (hands-on) questions in a timed environment. Two exams – worth 10% each – on **Mon. 30<sup>th</sup> Jan.** and **Mon. 13<sup>th</sup> Feb.**

***Response papers (20%)*** – three, short response papers to course readings – worth 5%, 10% and 5% of the final grade – to be submitted on **Mon. 23<sup>rd</sup> Jan.**, **Mon. 13<sup>th</sup> Feb.**, and **Mon. 6<sup>th</sup> March.**

***Projects (60%)*** – reports detailing the character, logic, and results of various small lab-based projects due: **Mon. Jan 16<sup>th</sup>** (5%), **Mon. 6<sup>th</sup> Feb.** (10%), **Mon. 27<sup>th</sup> Feb.** (10%), **Mon. 13<sup>th</sup> March** (10%), **Mon. 27<sup>th</sup> March** (10%), **Mon. 3<sup>rd</sup> April** (5%), **Mon. 10<sup>th</sup> April** (10%).

## **Weekly Course Schedule**

### **Week 1 (Mon. 9<sup>th</sup> Jan.)**

INTRODUCTION – class overview, aims, structure  
Intro to flaked stone technology & basic terminology

**Project #1** - produce flake for illustration

### **Week 2 (Mon. 16<sup>th</sup> Jan.)**

EXPERIMENTAL STONE TECHNOLOGY  
Knapping exhibition by Sean Doyle / Making your own arrowhead

Submit: Project #1 (email, or hand in at start of class) (value: **5%**)

### **Week 3 (Mon. 23<sup>rd</sup> Jan.)**

RAW MATERIALS #1 – ‘Natural’ influences  
Petrology, fracture mechanics, physical characterisation

**Project #2** - Design heat treatment project

Submit: Paper #1 – experimental archaeology (value: **5%**)

### **Week 4 (Mon. 30<sup>th</sup> Jan.)**

RAW MATERIALS #2 – ‘Cultural’ practices  
Quarrying, workshops, selection processes and the *chaîne opératoire*  
*Video* – Spear in the Stone

**Bell-ringer exam #1** – basic terminology (value: **10%**)

### **Week 5 (Mon. 6<sup>th</sup> Feb.)**

TYPOLOGY  
Typology and the interpretation of morphological variability (Bordes’ typology, culture history etc.)  
Recording retouched tool types

Submit: Project #2 – heat treatment experiment (value: **10%**)

**Week 6 (Mon. 13<sup>th</sup> Feb.)**

TECHNOLOGY

Introduction to flake and blade technologies, basic terms, significance, evolution and human cognition

**Project #3** – Experiment on hard v. soft hammer knapping

Submit: Paper #2 – lithic typology (value: **10%**)

**Bell-ringer exam #2** – typology (value: **10%**)

**Week 7 (Mon. 20<sup>th</sup> Feb.)**

**MID-TERM RECESS (no classes)**

**Week 8 (Mon. 27<sup>th</sup> Feb.)**

FUNCTIONAL ANALYSES

History of use-wear studies, low v. high-power debate, residue analyses & aDNA

**Project #4** - Experimental low-power use-wear study

Submit: Project #3 - hard v. soft hammer knapping (value: **10%**)

**Week 9 (Mon. 6<sup>th</sup> March)**

STONE TOOLS AS SOCIAL MEDIA

The role of lithic technology in social relations: symbolism & identity construction.  
Continue use-wear experimental programme

Submit: Paper #3 – social meaning in lithics (value: **5%**)

**Week 10 (Mon. 13<sup>th</sup> March)**

PROJECTILES

Origin and development (spears, atlatls, arrows), discriminating point types (form & function), understanding variability, cultural significance...

**Project #5** – Projectiles in Ontario archaeology

Submit: Project #4 – use-wear analysis (value: **10%**)

**Week 11 (Mon. 20<sup>th</sup> March)**

ORGANISATION OF PRODUCTION

From expedient to specialist, insights to socio-economic processes via production, the *chaîne opératoire*

Continue projectiles project.

**Week 12 (Mon. 27<sup>th</sup> March)**

SOURCING STUDIES #1

Aims, methodological bases, history of use; visit to MAX Lab.

**Project #6** – interrogating sourcing data (small-set)

Submit: Project #5 – projectiles' analysis (value: **10%**)

**Week 13 (Mon. 3<sup>rd</sup> April)**

SOURCING STUDIES #2

Lab – elementally characterising your own artefacts / raw materials

Project – interrogating sourcing data (big-set)

Submit: Project #6 - sourcing data analysis (value: **5%**)

**Week 14 (Mon. 10<sup>th</sup> April)**

General lab work if needed

Submit: Project #7 – characterisation study (value: **10%**)

## **Course Policies**

### **Submission of Assignments**

Assignments must be submitted by email ([stringy@mcmaster.ca](mailto:stringy@mcmaster.ca)) by the assigned date.

### **Grades**

Grades will be based on the McMaster University grading scale:

<b>MARK</b>	<b>GRADE</b>
90-100	A+
85-90	A
80-84	A-
77-79	B+
73-76	B
70-72	B-
67-69	C+
63-66	C
60-62	C-
57-59	D+
53-56	D
50-52	D-
0-49	F

### **Late Assignments**

Late projects are penalized **5%** of the mark per day including weekends and holidays with a maximum of **3 days late** after which a 0 grade will be awarded. Extensions can only be gained if the student provides an appropriate note/letter from SAS, or other university certification system (e.g., MSAF – see below). Assignments are to be submitted to the instructor via email ([stringy@mcmaster.ca](mailto:stringy@mcmaster.ca)).

### **Absences, Missed Work, Illness**

An arrangement can be made for a missed mid-term exam to be taken at a later date if the student provides an appropriate note/letter from Faculty office, or SAS (see below).

**No grade / reweighting policy** - grades will *\*not\** be reweighted, i.e., if a bell-ringer exam is missed, then a make-up exam must be taken, the grade is not just added to the next requirement.

### **McMaster Student Absence Form (MSAF) policy**

- The MSAF should be used for medical and non-medical (personal) situations.
- Approval of the MSAF is automatic (i.e., no documentation required)
- Rules governing the MSAF are as follows:



The timeframe within which the MSAF is valid has been reduced from 5 days to 3 days.

The upper limit for when an MSAF can be submitted has been reduced from 'less than 30%' to 'less than 25%' of the course weight.

The 'one MSAF per term' limit is retained.

As per the policy, an automated email will be sent to the course instructor, who will determine the appropriate relief. Students must immediately follow up with their instructors. Failure to do so may negate their relief.

Policy: The MSAF policy can be found in the Undergraduate Calendar under General Academic Regulations > Requests for Relief for Missed Academic Term Work or here:

[http://academiccalendars.romcmaster.ca/content.php?catoid=11&navoid=1698#Requests\\_for\\_Relief\\_for\\_Missed\\_Academic\\_Term\\_Work](http://academiccalendars.romcmaster.ca/content.php?catoid=11&navoid=1698#Requests_for_Relief_for_Missed_Academic_Term_Work)

### **Avenue to Learn**

In this course we will be using Avenue to Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, usernames for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

### **University Policies**

#### **Online Elements**

This course includes on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, usernames for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

#### **Copyright and Recording**

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

### **Academic Integrity Statement**

You are expected to exhibit honesty and use ethical behavior in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/), located at <https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/>

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g., the submission of work that is not one's own or for which credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

### **Authenticity/Plagiarism Detection**

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g., A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to [www.mcmaster.ca/academicintegrity](http://www.mcmaster.ca/academicintegrity).

## **Conduct Expectations**

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, whether in person or online.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g., use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students’ access to these platforms.

## **Faculty of Social Sciences E-mail Communication Policy**

Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including TAs), and from students to staff, must originate from the student’s own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student’s responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.

## **Academic Accommodation of Students with Disabilities**

Students with disabilities who require academic accommodation must contact [Student Accessibility Services](#) (SAS) at 905-525-9140 ext. 28652 or [sas@mcmaster.ca](mailto:sas@mcmaster.ca) to make arrangements with a Program Coordinator. For further information, consult McMaster University’s [Academic Accommodation of Students with Disabilities](#) policy.

## **Requests for Relief for Missed Academic Term Work**

McMaster Student Absence Form (MSAF): In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work”. <https://academiccalendars.romcmaster.ca/content.php?catoid=11&navoid=1698#Requests for Relief for Missed Academic Term Work>

## **Academic Accommodation for Religious, Indigenous or Spiritual Observances (RISO)**

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO](#) policy. Students should submit their request to their Faculty Office **normally within 10 working days** of the beginning of term in which they anticipate a need for accommodation or to the Registrar’s Office prior to their examinations. Students should also contact their

instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

### **Privacy Protection**

In accordance with regulations set out by the Freedom of Information and Privacy Protection Act, the University will not allow return of graded materials by placing them in boxes in departmental offices or classrooms so that students may retrieve their papers themselves; tests and assignments must be returned directly to the student. Similarly, grades for assignments for courses may only be posted using the last 5 digits of the student number as the identifying data. The following possibilities exist for return of graded materials:

- Direct return of materials to students in class;
- Return of materials to students during office hours;
- Students attach a stamped, self-addressed envelope with assignments for return by mail;
- Submit/grade/return papers electronically.

Arrangements for the return of assignments from the options above will be finalized during the first class.

### **Extreme Circumstances**

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.

