The evidence base for historical research comes in the form of original texts, manuscripts, and artefacts. Knowing how to collate, interpret, and weigh these materials is key to research. Sources do not speak for themselves. They often conflict. Sometimes they omit more than they provide. This module investigates source material in detail as part of skills training for research in history and philosophy of science. We scrutinise sources of all kinds and consider how to make the most of source material and how to assess sources for strengths and weaknesses.

### Basic course information

<table>
<thead>
<tr>
<th>Moodle Web site:</th>
<th><a href="https://moodle-1819.ucl.ac.uk/course/view.php?id=7420">https://moodle-1819.ucl.ac.uk/course/view.php?id=7420</a></th>
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</thead>
<tbody>
<tr>
<td>Assessment:</td>
<td>2x 2500-word essays</td>
</tr>
<tr>
<td>Timetable:</td>
<td><a href="https://www.ucl.ac.uk/sts/hpsc">www.ucl.ac.uk/sts/hpsc</a></td>
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<tr>
<td>Prerequisites:</td>
<td>No pre-requisites</td>
</tr>
<tr>
<td>Required texts:</td>
<td>No required textbooks (see moodle for required readings)</td>
</tr>
<tr>
<td>Course tutor(s):</td>
<td>Dr Bill MacLehose</td>
</tr>
<tr>
<td>Contact:</td>
<td><a href="mailto:w.maclehose@ucl.ac.uk">w.maclehose@ucl.ac.uk</a> t 020 7679 2929</td>
</tr>
<tr>
<td>Web:</td>
<td><a href="https://www.ucl.ac.uk/silva/sts/staff/maclehose">www.ucl.ac.uk/silva/sts/staff/maclehose</a></td>
</tr>
<tr>
<td>Office location:</td>
<td>22 Gordon Square, Room 3.2</td>
</tr>
<tr>
<td>Office hours:</td>
<td>T 12-1, F 12-1 and by appointment</td>
</tr>
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### Schedule

<table>
<thead>
<tr>
<th>UCL Week</th>
<th>Topic</th>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Introduction: What is a Source?</td>
<td>11 Jan</td>
<td>Read essential reading and bring copy to class</td>
</tr>
<tr>
<td>21</td>
<td>The Critical Eye: Reading Journal Articles</td>
<td>18 Jan</td>
<td>Read essential reading and bring copy to class</td>
</tr>
<tr>
<td>22</td>
<td>Speak To Me! Interviews and Oral History</td>
<td>25 Jan</td>
<td>Read essential reading and bring copy to class</td>
</tr>
<tr>
<td>23</td>
<td>Picturing the Past: Using Images</td>
<td>1 Feb</td>
<td>Read essential reading and bring copy to class</td>
</tr>
<tr>
<td>24</td>
<td>Material Culture: Scientific Instruments</td>
<td>8 Feb</td>
<td>Read essential reading and bring copy to class</td>
</tr>
<tr>
<td>25</td>
<td>Reading Week</td>
<td>15 Feb</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Organizing Knowledge: Libraries, Museums, and Archives</td>
<td>22 Feb</td>
<td>Read essential reading and bring copy to class</td>
</tr>
<tr>
<td>27</td>
<td>Telling Lives: Scientific Biographies</td>
<td>1 Mar</td>
<td>Read essential reading and bring copy to class</td>
</tr>
<tr>
<td>28</td>
<td>Go Public! Communicating Science in the Media</td>
<td>8 Mar</td>
<td>Read essential reading and bring copy to class</td>
</tr>
<tr>
<td>29</td>
<td>Putting It All Together: Case Studies</td>
<td>15 Mar</td>
<td>Read essential reading and bring copy to class</td>
</tr>
<tr>
<td>30</td>
<td>Conclusions</td>
<td>22 Mar</td>
<td>Read essential reading and bring copy to class</td>
</tr>
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</table>

### Assessments

#### Summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Deadline</th>
<th>Word limit</th>
<th>Deadline for Tutors to provide Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% Review of a research article</td>
<td>13 Feb 2019</td>
<td>2500 words</td>
<td>27 Feb 2019</td>
</tr>
<tr>
<td>50% Essay on visual sources</td>
<td>23 April 2019</td>
<td>2500 words</td>
<td>7 May 2019</td>
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</table>

### Assessments

All assignments must be submitted via Turn-It-in, on Moodle

1. Review of a research article

Choose a research article published in one of the following History of Science Journals
and review it (British Journal for the History of Science; Isis; Osiris; History of Science; Ambix; Notes and Records of the Royal Society; BJHS Themes). Reviews should explain how the article relates to existing literature in the field; identify and critically assess the argument made by the author[s]; identify what forms of evidence are used to make the argument and the breadth of evidence used; and critically assess the strength of the overall argument presented in the article. Your conclusion might suggest ways the research reported on in the article could be further extended.

In order to write your review, please refer to the guidance worksheet on Moodle, under the section “Course Materials”.

Assessment Criteria for the First Assignment

In addition to the general assessment criteria listed in the STS Student Handbook, the review will be assessed against the following criteria:

1. Ability to identify and situate the article in its scholarly context
2. Ability to recognize the sources used by the author of the article
3. Ability to understand how these sources have been used
4. Ability to critically discuss the argument of the article
5. Overall ability to write the review in an argumentative fashion

2. Essay on Visual sources

For this assessment, you will need to find a visual source clearly connected to the history of science (e.g. a picture of a scientist or laboratory or scientific instrument or experiment). You will then need to research it. Practically speaking this means answering the following questions about it:

1. What does the image represent?
2. How does it represent it?
3. How is it made?
4. What is it made of? (material, texture...)
5. When, where and by who has it been made?
6. For what purposes was it made?
7. Who was the intended audience? Did the image reach them?
8. Has it changed over time?
9. How has it travelled? Where? Under which conditions?
10. What is your source’s biography?
11. What is its significance in the history of science?

Once you are satisfied that you have answers to these questions (and you might add questions of your own), you can start writing your essay.
You are strongly encouraged not to keep this assessment for the last minute, and to start working on this essay early in the term, so that you will be able to discuss your work in the last session of the module.

**Assessment Criteria for the Second Assessment**

In addition to the general assessment criteria listed in the STS Student Handbook, the image essay will be assessed against the following criteria. The essay should offer:

1. Clear identification of a specific image, giving details of its time and place of production and, where appropriate, its current location.
2. Answers to as many as possible of the questions cited above.
3. Evidence of research into the history of the source, through, e.g. the effective use of a range of primary and/or secondary sources to make sense of it.
4. Evidence of critical analysis of the source and related texts, presented in an argument.
5. Clear presentation, well-organized writing, and accurate citations, spelling and punctuation.

**Class List and Readings**

The essential readings for this class introduce students to the topic to be discussed. Students are required to bring copies of these essential readings to class for reference (paper or online). The remaining readings are available online or in the library. They are not on reserve so please, if you take them from the library, return them promptly so that others may use them too.

Several readings below may be found on the website [http://www.sites.hps.cam.ac.uk/research/Fpage.html](http://www.sites.hps.cam.ac.uk/research/Fpage.html) (“Cambridge HPS Research Guide”)

**Session 1: Introduction: What is a Source?** (11 January)

In this session we will consider the different types of sources available to the researcher in the history of science: especially primary sources and secondary sources. We will consider online resources for history of science that enable quick access to a range of texts, and ask why it is worth seeking out sources that are not available online. The class will also ask “what is the history of science?” – how is it different to normal history and how is it related to philosophy and science studies? Does HPS involve different kinds of sources to other types of history?

**Essential Reading:**

Session 2: A Critical Eye: Reading Journal Articles (18 January)
Everyone reads, but scholarship requires a special kind of reading, which is sometimes called “close” or “critical” reading. This means getting a sense of the sort of questions asked about your research topic, which questions have already been answered, and which still await an answer. It also means paying careful attention to the way an author constructs an argument, how they deploy evidence, rhetoric, organization, etc. to persuade their reader. During the class, we will dissect a research article, and this activity will prepare you for the first coursework assignment of the module: the review of a research article. In preparation for this session, please read the assigned research article (Essential reading below), keeping in mind the following questions:

1. What is the topic of the article?
2. What question(s) does the author ask about this topic?
3. What is the argument of the article?
4. What kind of source material is presented in this article?
5. How are the sources used in the argument?
6. What other sources may have shed light on the topic?
7. Do you think the author is successful in making their argument?
8. Did the author leave anything out?
9. What could be an avenue for further research on the topic?

Essential Reading:

Additional Reading:

Session 3: Speak To Me! Interviews and Oral History (25 January)

Historians of recent science and technology may benefit from being able to speak in person with the protagonists in the events they are researching. ‘Oral history’ uses interviews to construct histories of episodes in the past. To do this requires skills in interviewing and making use of interviews in writing history. This session explores the requisite skills and in preparation for it, please read the following essential readings.

Essential Reading

Additional Reading:

**Session 4: Picturing the Past: Using Images** (1 February)
+ Discussion of Criteria of Assessment for Assignment 1

Alongside written papers, historians of science are also turning to images and visual representations as source material for their investigations. In this session we will discuss the different kinds of visual material available to the historian, and consider the different uses historians have for visual sources in their investigations. Images are not only valuable to historians for what they represent, but for how they are made and produced, how they circulate, how they are used and by whom. Ultimately, this session’s aim is to understand what images can teach us, which other sources cannot.

**Essential Reading**

**Additional Reading**

**Session 5: Telling Lives: Scientific Biographies** (8 February)

A common genre of historical writing is the biography, the story of a scientist’s life. But how should we tell lives in science? Whose biography is worth recording? Famous scientists, lab technicians, wives and daughters of scientists? Could we tell biographies of scientific objects, like the microscope or a laboratory mouse? This class addresses whose identities matter in science, and how biography can serve or hinder the historian of science.

**Essential Reading**

**Additional Reading**
1. Jan Golinski, “Identity and Discipline”, in *Making Natural Knowledge* (Cambridge:
Reading Week (12 to 16 February)

Session 6: Organizing Knowledge: Libraries, Museums, and Archives  (22 February)
To discover the past, historians have to do research with sources located in a variety of venues. This class explores the history and development of libraries, museums and archives, and discusses how to make use of these places to do research.

Essential Reading

Additional Reading
2. Peter Burke, A Social History of Knowledge: From Gutenberg to Diderot (Cambridge: Polity Press, 2000), 81-115 (on the history of organizing knowledge in e.g. libraries)

Session 7: Go Public! Communicating Science in the Media (1 March)
+ Discussion of Criteria of Assessment for Assignment 2
The communication of knowledge is an essential part of science, vital to spreading new ideas, exchanging insights and training new generations of experimenters. In this session we will discover how the historical investigation of the different means whereby the communication of science occurs can teach us a lot about the history of science itself.

Essential Reading

Additional Reading

→ PLEASE TAKE NOTE: For this session, you will have to prepare a 10 minutes group presentation on one of the topics listed below. Groups will be formed in the first week of the course (week 20). Each group will choose one topic. Your task, as a group, consists of finding out about how your chosen topic appeared in the media at the time it occurred (in e.g. newspaper articles, visual representations, TV programmes...). Your presentation should make use of examples taken from the media. You should then reflect on your findings in relation to the history of science in public. In order to guide your reflection you may use the following questions:
Who was considered to be/recognised as a scientist?
What were they shown doing?
How is science defined here?
How is non-science defined here?
What relation to science is encouraged on the part of the audiences?
What do your findings tell you about the place of science in society/culture?
How is science presented in relation to the larger social/political/cultural context?

List of Possible Presentation Topics

1. Watson and Crick discover the structure of DNA (1953)
2. First test of a British Thermonuclear bomb (H-Bomb) (1957)
3. Launch of the first satellite, Sputnik (1957)
4. International Geophysical Year (1957)
5. The Pill (1961)
6. The first Moon landing (1969)
7. The rise of the personal computer (1980s)

Session 8: Material Culture: Scientific Instruments (8 March)
Instruments and tools are crucial to scientists’ work. Without the microscope, there would be no microbes. Without the LHC, no Higgs boson. This session will consider what the study of instruments can teach us about the history and philosophy of science. We will look at actual ancient instruments and learn how they can be made to talk.

Essential Reading:

Additional Readings:

Session 9: Putting It All Together: Case Study (15 March)
In this session we will work on a case study, using several of the different types of sources we’ve encountered in the past weeks. If you have a laptop or other device capable of doing internet searches it would be useful to bring it to class. There will be some group-work followed by a class discussion. The group work will consist of using documents brought to class by Dr. Werrett to answer the following question:

What do primary and secondary sources tell us the history of ballooning in England
between 1780 and 1850? The essential reading for this week provides background.

**Essential Reading**

**Additional Reading**

**Session 10: Conclusion** (22 March)
In this final session, we will discuss your work on visual sources. The session will be useful for the essay on visual sources which you will submit after the end of the course.
## Information on Word Counts and Late Penalties.

| Over-Length Coursework | Word Counts for all assessments are specified in Portico. Word Counts exclude bibliographies but include all other text in an assignment.  
There is no penalty for assessments below the word count, but marks may be lost if an assessment is lacking in content, which a low word count may entail.  
Any assessment up to 10% above the specified word count will incur a 3% penalty.  
Any assessment more than 10% over the specified word count will incur a 10% penalty.  
Tutors must mark work before applying any penalty and must indicate in their comments the mark before any penalty is applied and the mark after a penalty is applied. |
| Late Submissions, where Extenuating Circumstances Don’t apply | Marks for coursework received up to two working days after the published date and time will incur a 10 percentage point deduction in marks (but no lower than a pass mark).  
Work received more than two working days and up to five working days after the published date and time will incur no more than a pass mark (40% UG and 50% for PG)  
Work submitted more than 5 working days after the published date and time will receive a mark of zero (0) but be considered complete.  
Submissions will not be accepted or marked after the published date and time.  
In the case of coursework that is submitted over length and is also late the greater fo the two penalties will apply. |