

ARCH 372 | Materials and Technologies in the Ancient Greek World Spring 2025

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Course Description

The study of the material culture of past societies is one of the most direct ways to explore not only the technological advances of these peoples, but also their beliefs and aspects of everyday life. The human need for shelter, subsistence, safety, hygiene and eventually wealth and prosperity is common throughout the ages and this was also the case in antiquity. The Greek landscape, rich in natural resources in a very welcoming mild eastern Mediterranean climate, has been hospitable to people, allowing societies and polities to develop their technological skills and to improve their ways of life.

This course deals primarily with the technologies applied to transform different raw materials into finished portable products and permanent installations such as buildings and bridges, covering a large chronological period spanning from the Neolithic (4th mill. BCE) up to Roman times (4th c. CE) in Greece and the Greek world in general. A variety of materials, both organic and inorganic, as well as all aspects of technological processes will be discussed in class. In addition, the reasons behind the need to work on a certain material and produce a specific artefact will be discussed, as all technological advances derive from certain societal needs, and it is necessary to bear in mind why at particular times and at specific places people decided to create these objects. This applies not only to portable items, but also to architectural structures and major constructions. Furthermore, an emphasis is given to the meaning and importance of these artefacts and monuments not only to the local people, but also to other groups of individuals or societies who imitate the styles or adopt the techniques.

An elementary question that will be the focus of the class is to examine if the progress of civilization is the cause for technological advance or it is actually the technology and the new skills that are the reasons for people to improve their way of life and eventually 'create' civilizations and empires.

An essential part of the course are museum and site visits, lectures at CYA by guests who specialise in certain technologies, visits to laboratories and hands-on workshops under the guidance of modern craftsmen skilled in ancient techniques and researchers of archaeological remains. Students will be able to deal with ancient artefacts, learn various techniques directly from the specialists and examine the final products as exhibited in museums.

Learning Objectives

By the end of the course the students will:

- Have acquired a firm knowledge of the technologies and skills that were invented and shaped in antiquity
- Have experienced with hands-on activities the process of creating an item or a work of art and thus understand the level of skill that was achieved in ancient times
- Be able to comprehend in an experiential manner the effect of the technological advances to the history of mankind

Aims

- To explore in depth the technologies that were developed within the Greek region from the Neolithic period to the Roman times
- To examine how the environment and the landscape are affecting the well-being of the local societies
- To investigate how technology can facilitate people's lives and eventually be associated directly to the progress
 of civilisation
- To comprehend the reasons why certain technologies appear at certain times to cover specific needs

Course Requirements

i) Attendance and participation

You are expected to attend all classes whether they are held at CYA, museums, archaeological sites or workshops. You are also expected to participate in discussion, as any comments or questions are welcome. In order to be more involved in the course, you are requested to create small research groups of three or four participants as there will be various team activities. This will count towards the 15% of the Final Grade.

Important note: Absences. In keeping with CYA guidelines, no unexcused absence is allowed. It is your own responsibility to contact in advance the Executive Director of Student Affairs in order to let her know the reason for your absence. <u>Unexcused absences may result in a lower grade</u>, as 5% will be deducted from your final grade for each absence. In case of illness, it is your responsibility to contact me and to make up for the missed work (which includes a short essay on the day's topic, as stated above).



ii) Research paper

The participants are required to write one research paper on a topic of their choice.

Format: Use Times New Roman font, 1.5 space, size 12 and preferably footnotes (no endnotes or in-text references).

Length: The paper should be no more than <u>1500 words</u> (*excluding* bibliography, tables, maps and illustrations).

Essay title: You can either choose from the available list of topics (see page 7) or select a new one that suits your own questions and interests, always in discussion with your instructor. In any case, you are strongly advised to contact your instructor well before the deadline and discuss thoughts and queries you may have.

Plagiarism: You should be very clear and careful in order to reference your work, source the illustrations and give proper reference to other people's work. There is nothing wrong in using theories and ideas found elsewhere in publications or online, but it is considered a copyright violation to use this data without properly referencing the person who made it available to the public.

Delivery: Please submit your paper to the instructor electronically via email only.

Note: You are expected a) to use at least <u>3 bibliographic references</u> from the *Recommended bibliography*, b) to inform via email the instructor on your progress (Milestone email) and c) to attend the personal feedback session.

The Research Paper will count towards the **30%** of the Final Grade.

Milestone email: Tuesday, Thursday, 27 March 2025 Research paper submission deadline: Tuesday, 8 April 2025

iii) Mid-term quiz

A short quiz will take place instead of mid-term exams, so that you and the instructor will get an idea about your progress up to that moment. You are strongly encouraged to answer the questions by using your imagination, knowledge and personal experience. The mid-term quiz will count towards the **15%** of the Final Grade.

Mid-term quiz: Thursday, 13 March 2025

iv) Group Presentations

After you have created your research groups you will select a topic (see p. 7) that you will present to the rest of us (for no more than 10 minutes). Do check the syllabus and see what you would like to explore: artefacts, monuments, events, theories and hypotheses, etc. Feel free to do it your way. On the same day of your presentation, you are requested to submit a short report on what you worked on (max. 300 words <u>per person</u>, excluding a very brief bibliography). You are asked to submit your manuscript to the instructor electronically via email. Keep your eyes open, be innovative, be imaginative, be accurate.

This presentation will count towards **15%** of your Final Grade.

Presentation dates: Your choice (during class times)

v) An amateur's guide to technology. Becoming the craftsperson (The Guide)

For this project you are expected to act as a craftsperson and present a document in which you will present all the data necessary in order to explain in detail the creation and function of a construction, small or large. In other words, make something like a guide on how to make the X construction. It could be anything from a clay drinking cup to a stone temple. In this document, you need to provide all the details, such as materials, tools, techniques, guidelines, suggestions etc for someone to make your object/structure/construction of choice. Feel free to include text, drawings, photographs, maps, plans, etc. As the course proceeds, more good ideas could appear. Keep your eyes open, be innovative, be imaginative, be accurate. The Guide will count towards **25%** of your Final Grade.

Submission: Thursday, 8 May 2025

Class Field Work and CYA Field Study

As ARCH 372 explores places of archaeological interest, CYA field Study trips are directly connected to it. Taking notes and photographs is always a good idea.



Class Field Work

There will be plenty of outdoor activities, such as fieldtrips to various archaeological sites and city walking. Ideally, as some of the visits are one off, you should carry with you your notebook and a pen/ pencil, a photographic camera (be aware that in some museums and sites photography is not allowed) and your smile.

Evaluation and Grading

The **Final Grade** is broken down as follows:

Class attendance & participation
 Research paper
 Mid-term quiz
 15%

Group presentation 15% The Guide 25%

Total: 100%

i) Required Readings

For each class/ visit the reading of one paper is required. Ideally, the participants <u>should read these papers before the class</u>, as this will allow them to participate lively in the discussion and comprehend the day's topic more fully. All the *Required Reading* will be available on moodle as pdf files.

ii) Recommended Bibliography

The course covers a wide range of themes and topics throughout a lengthy period of time over a wide geographical region. Therefore, the *Recommended Bibliography* gives you the opportunity to explore the given subject in greater detail.

iii) Handouts

Handouts are useful collections of notes that include keywords and web links, directly related to each class/ topic. At the end of each day the handout of the next meeting will be available to download and/ or to print at moodle in order to prepare for the following lecture or site/museum visit.

iv) Online resources

There are several online resources on the subject of the course some of which you will find below:

- Metropolitan Museum of Art, Heilbrunn Timeline of Art History | http://www.metmuseum.org/toah/
- Foundation of Hellenic World | http://e-history.gr/en/index.html
- Introduction to Greek Pottery (Beazley archive, Oxford University)| http://www.cvaonline.org/tools/pottery/default.htm
- Zea Harbour Project | www.zeaharbourproject.dk
- National Archaeological Museum at Athens | https://www.namuseum.gr/en/
- Museum of Cycladic Art | http://www.cycladic.gr
- Greek Ministry of Culture and Sports- Odysseus | http://odysseus.culture.gr/index_en.html
- The Museum Cycle (Superb museum guides) | https://www.latsis-foundation.org/eng/e-library

Evaluation Criteria - Course Assignments

Please refer to the course Scoring Rubrics available on Moodle for this course

Upgrading the course

If you wish, you can attend this course as at a 400 level, which means that you need to dedicate more time in researching for your assignments and do some extra work. If you are interested, please contact the course instructor after class.

Theory and Practice

During this course, several workshops and hands-on activities will take place as its aims will be achieved through personal autopsy and experience. Nevertheless, during class the theoretical framework and approach will be discussed, without which it will be impossible to proceed and comprehend the various aspects of ancient technologies and materials. Reading the relevant bibliography will ensure that the course participants will know not only what they are doing, but also for what reason.



CYA Regulations and Accommodations Attendance Policy

CYA regards attendance in class and on-site (in Athens or during field study trips) as essential. Absences are recorded and have consequences. In case of absence, you will be required to deliver a summary of the Required Reading of the day you missed.

ePolicy on Original Work

Unless otherwise specified, all submitted work must be your own original work. Any ideas taken from the work of others must be clearly identified as quotations, paraphrases, summaries, figures etc., and accurate internal citations and/or captions (for visuals) as well as an accompanying bibliography must be provided.

Use of Laptops

In-class or onsite use of laptops and other devices is permitted if this facilitates course-related activities such as note-taking, looking up references, etc. Laptop or other device privileges will be suspended if devices are not used for class-related work.

Class Schedule

Class Day	Day/Date/Place	Topic / Readings / Assignments Due
1	Tue January 28 CYA	Introduction to the course. Different people same needs: A response to the environment(s). Description During this introductory class we are going to discuss how the needs of a society are more or less the same from prehistoric times to the modern era and set a series of questions that will follow us throughout the course. At the same time, we shall talk about the aims and objectives of the course and an analytical presentation of the syllabus and the assignments will follow Required reading Renfrew & Bahn 2003: 311-350 Recommended bibliography Caple 2006: 1-25, 94-121 Evely in Cline 2010: 387-404 Williams in Wisseman and Williams 1994: 2-13
2	Thu January 30 CYA	Raw materials and trade routes. Why, where from, where to, when? Description Not all kinds of raw materials are available everywhere and in certain cases people had to traveling distances in order to acquire them so that they would transform them to finished products of use them in architecture or ship building. We are going to explore where the main sources of raw materials are located and discuss how people would get them via trade, exchange or even warfare Required reading Renfrew & Bahn 2003: 351-384 Recommended bibliography Caple 2006: 138-54 Humphrey 2006: 67-80 (an overview of several key aspects), Humphrey et al. 1999: 409-442 Hurcombe 2007: 109-118, 209-211
3	Tue February 4 Metro Stations	Ancient city, modern city Description During the excavations for the new metro tunnels, in several areas of Athens architectural remains were uncovered providing archaeologists the opportunity with further evidence regarding the history of Athens, as roads, fortification walls, pipes for water supply, pottery kilns, baths and othe constructions saw the light of day. We are going to visit the metro stations at Syntagma Square and Monastiraki in order to have a closer look to these spectacular finds. At Monastiraki we are going to witness the diachronic use of this area from Archaic to Roman times. Required reading Wilson in Oleson 2008: 293-96, 302-304

Stampolidis & Parlama 2003: 149-161, 209-215

Recommended bibliography



4 Thu February 6 CYA

Ancient pyrotechnology

Description

Fire, one of the tools that really changed the course of mankind. Fire is an essential part of the technology as a variety of craftsmen, such as the potter and the metalsmith are depended on it in order to produce every day utensils, tools, weapons, jewellery and medicine. Even one of the most basic needs, subsistence, is heavily depended on it. Pyrotechnology is a fascinating field of research, especially if one considers the amount and effort needed to maintain high temperatures, not to mention the large quantities of fuel needed.

Required reading

Roberts and Radivojevic 2015: 299-306

Recommended bibliography

Renfrew and Bahn 2003: 335-38

5 **Fri** February 7 Workshop (VK3)

Working in the dark: Lamps and light

Description

How did people moved, worked and interacted without the day light? Which activities had time and light restrictions? In this class we will discuss all these aspects and at the same time we will attempt to construct our very own clay lamps based on ancient prototypes.

Required reading

No reading is required

Recommended bibliography

http://www.getty.edu/publications/ancientlamps/assets/downloads/AncientLamps Bussi ere LindrosWohl.pdf

6 Tue February 11 Metro stations

Space. From private to public I

Description

This second walk around the Metro stations of Athens will take us to the areas of Evangelismos and Egaleo in order to explore some major public works, including the sacred road from Athens to Eleusis.

Required reading

Quilici in Oleson 2008: 551-579

Recommended bibliography

Humphrey *et al.* 1999: 409-43 Humphrey 2006: 72-75 Stampolidis & Parlama 2003

7 Thu February 13 Ancient Agora of Athens

Space. From private to public II

Description

The Agora of Athens, the civic, cultural, economic and political centre of the town from the 7th c. B.C. and for about a millennium will be our focus, as we are going to walk amongst buildings of major importance and explore their function, as well as their architectural characteristics. Finally, we are going to explore what we may call the 'technologies of Democracy'.

Required reading

Camp 2003: Agora Excavations, esp. 12-20, 30-40, 43-44. Download from www.agathe.gr/Icons/pdfs/AgoraPicBk-16.pdf

Recommended bibliography
Camp 2001

8 Tue February 25 British School at Athens (TBC)

Working at a laboratory

Description

During this class we shall visit a laboratory of archaeological science and discuss what information can we receive from the study of finished products about the technologies of the ancient societies. At the same time, we shall explore the infrastructure of a modern laboratory in relation to special reference collections, funding, etc.

Required reading

Pendedeka in Brysbaert 2011: 106-125

Recommended bibliography

Hallager in Cline 2010: 405-414 Renfrew and Bahn 2003: Chapter 6 Rutter in Cline 2010: 415-29

Schreider 1999: 2-66

Shaw and Nicholson 2009: 121-47

See also Betancourt 1985 and Mountjoy 1993



9 Thu February 27 CYA &

Description

Museum of Cycladic

The Museum of Cycladic Art hosts a great exhibition that will shed light to our perspective regarding aspects of the everyday life of the ancient Greeks, and especially those leaving in the 6th and 5th c. BCE. Reconstruction drawings and short films, detailed captions and original artefacts will be the prime source of information during that visit.

In addition, we are going to spend a few minutes over one of the latest educational activities of the MCA, the touch-screen surfaces in the Cypriot Collection and experience the marvelous world of the trade routes and harbour towns of the ancient Mediterranean. Thus we will have the greater picture of how the Greeks would interact with their neighbours and exchange ideas, technologies, finished products and raw materials.

Required reading

Hurcombe 2007: 109-118, 209-211

Recommended bibliography Caple 2006: 94-117

Technologies and everyday life

Daily life in Antiquity (MCA thematic essay)

http://www.cycladic.gr/

10 Tue March 4 CYA

Weapons and warfare I

Description

Warfare is a major part in the history of human kind. Different weapons and warfare techniques were used at different times and from a social perspective it is very interesting to examine which people had access to weaponry at certain periods. Equally interesting is to study the evolution of weapon technology from stone axes to triremes with rams and wooden catapults. Certain categories of weapons are not only for combats and duels but also for hunting and for projecting social status.

Required reading

De Souza in Oleson 2008: 673-690

Recommended bibliography

Warfare in ancient Greece (Metropolitan Museum of Art thematic essay) https://www.metmuseum.org/toah/hd/gwar/hd gwar.htm

11 Thu March 6 National Archaeological Museum

Weapons and warfare II

Description

The National Archaeological Museum of Greece has some of the most impressive collections of weapons dating from the Neolithic period all the way to the Roman times. We are going to explore some of the exhibit cases and focus on the swords, spears, arrows and helmets that were discovered in various locations. At the same time, Greek art and iconography will assist us in discussing about objects that do not survive the archaeological record, such as the famous prehistoric figure-of-eight shield that was made with wood and leather.

Required reading

Mee 2011: 192-222 Recommended bibliography Cuomo 2007: 41-76

12 Tue March 11 Workshop (VK3)

Introduction to the wall paintings

Description

The luxurious and spectacular art of mural decoration arrived in Greece from Egypt during the Bronze Age. Geometric motifs, pictorial narrative scenes and various other decorative themes were depicted on the walls of buildings giving them an aristocratic and upper class character. An expensive art, demanding specialist workshops and master painters. We are going to study the wonders discovered at the Bronze Age town of Akrotiri at Thera, a site that yielded several painted compositions that truly altered our view regarding the skills and practices of prehistoric craftsmen.

Required reading

Doumas 1994: 14-32 Immerwahr 1990: 11-20 Recommended bibliography Evely 1999 (upon request)

13 Thu March 13 Workshop (VK3)

Making a fresco (+mid-term quiz)

Description

In order to understand the complexity, the limitations and the actual time needed by the artists to create a large composition. For this reason, together Mr Nikos Sepetzoglou, visual artist and wall



paintings specialist we will work with the fresco technique in order to produce a work of art following the prehistoric rules and tricks.

Required reading

Chapin in Cline 2010: 223-38.

Recommended bibliography von Rüden et al. 2018

14 Thu March 27 Acropolis of Athens

Building a sanctuary

Description

The site of the Acropolis has been for centuries the religious centre of the Athenians. During the 5th c. B.C. spectacular monuments, such as the Parthenon, the Erechtheion and the Propylaia were raised, visible today remarkable both for their aesthetics and architecture. A visit to this site, will allow us to examine closely the techniques and methods these skilled craftsmen and artists used in order to build them (admittedly in a short period of time).

Required reading

Camp 2001: 72-100 Recommended bibliography Brouscare 1997

Freud in Wisseman and Williams 1994: 199-216

Klein in Miles 2016: 105-118

15 **Fri** March 28 New Acropolis Museum

Cranes, colours, tools and (lack of) blueprints

Description

The permanent collections of the New Acropolis Museum, apart from the votive offerings and architectural members host scale models of the acropolis site through the various chronological periods, the stone mason's tools and a collection of mineral colours. Additionally, a study of the National Polytechnic School attempts to reconstruct the complex beam roof. All these and several other case studies will be studied in one of the most impressive museums in Europe.

Required reading

Korres *et al.* 1989 Spawforth 2008: 48-71 *Recommended bibliography* Korres 2001 (esp. 9-60)

16 Tue April 1 Workshop (VK3)

Building a house: Mudbricks

Description

From Neolithic huts to Roman villas, we are going to study the many faces, functions and applications of architecture. Our case study will be the use of mudbrick, as it was and remains an easily available building material, yet not without its own secrets and proper 'recipes'.

Required reading

Love 2013: 263-282 Recommended bibliography Cahill 2002

17 Thu April 3 Workshop (VK3)

Greek metallurgy: Techniques and products I (A craftsman's toolbox)

Description

One of the most interesting subjects of discussion is the case of the travelling artisan. Skilled individuals would travel around a region and offer their services for hiring. Metal-smiths, painters, ceramicists would move with their tool boxes and create masterpieces. A modern skilled craftsman, Mr Akis Gkoumas will come to CYA to show us the toolbox he is using and share with us his amazing skills as he is researching and practicing ancient metalworking for many decades.

Required reading

Mee 2011: 149-165 Recommended bibliography

Kassianidou and Knapp in Blake and Knapp 2005: 215-51

Tue April 8 CYA

Metals make the world go round (+Research paper)

Description

After the completion of the metals workshop, we are going to explore how metals get from the source, on board a boat and eventually to the hands of a metal-smith. Bronze and iron, silver and gold, four metals of great importance as they supply armies with weapons, craftsmen with tools and members of the elite(s) with objects of prestige.

Required reading

Craddock in Oleson 2008: 93-120



Recommended bibliography

Evely in Cline 2010: 387-404

19 Thu April 10 Workshop (VK3)

Greek metallurgy: Techniques and products II

Description

During this session we will continue our experiments on Mycenaean metalworking and see how the body movements and the control of our breath can help us create small works of art.

Required reading

No reading is required Recommended bibliography

Ancient craftsmanship: Bronzework (MCA) https://cycladic.gr/en/page/archaia-technologia

20 Tue April 22 CYA

Ships, ship-sheds and harbours

Description

Sea was always considered more of a bridge than a barrier. Greeks from very early times became seafarers around the Aegean at first and later on they travelled around the Mediterranean and the Black Sea. Aim of this session is to explore the technologies of ship building and their function as warships or merchant boat. Of crucial importance is to examine the anchorages, harbours and shipsheds that formed a crucial part in the development of marine activities.

Required reading

Blackman in Oleson 2008: 638-670

Pakkanen 2013

Recommended bibliography

Bass 1998: 183-191 (pdf only) Casson 1995: 3-42, 43-70, 77-96

Morrison 1968: 181-89

21 Thu April 24 Numismatic Museum

Value and currency

Description

The Numismatic Museum, former home of Heinrich Schliemann, hosts one of the greatest collections of coins from the ancient world. As we are going to explore the passing from premonetary to monetary-based economies, we shall discuss the techniques and rules of minting and elaborate on coinage and currency.

Required reading

Meadows in Oleson 2007: 769-779 Psoma in Stampolidis *et al.* 2017: 353-360

Recommended bibliography

Michailidou 2008: 179-216, 217-87

Henderson 2000: 282-95 Humphrey 2006: 67-80 Michailidou 2005: 15-22

22 Tue April 29 Floisvos Harbour (TBC)

The Athenian trireme

Description

We are going to visit the unique Olympias, a fully reconstructed Athenian trireme, located at the marina of Floisvos, near Faliron. There we are going to discuss the historical background, the Attic landscape (and seascape), the technology of trireme building and the construction of the gigantic ship-sheds that played a major role to the economic and political supremacy of the city-state of Athens for almost two centuries.

Required reading

Macgrail in Oleson 2008: 606-37

Recommended bibliography

Piraeus, The Port of Triremes (Exhibition catalogue).

23 Tue May 6

Organic and perishable materials. Medicine and subsistence

Description

Despite the fact that organic materials, such as plants, leather, seeds, linen and wood, do not survive the mild Mediterranean climate, we have several forms of evidence that allows us to understand how people worked in the fields, built ships, treated patients with medicinal plants or made lovely baskets and other objects from perishable materials. This session is dedicated to what does not survive, yet played a major role in everyday life.



Required reading

Margaritis and Jones in Oleson 2008: 158-174

Stampolidis & Tasoulas 2014: 32-49

Recommended bibliography

Barber 1991

Humprey 2006: 19-34,

Humprey et al. 1999: 147-172, 346-70 MacGregor 1985: 14-18. 32-37, 55-72

Nutton 2006: 37-52, 87-102, 103-114, 310-316 Raheel in Wisseman and Williams 1994: 121-56 Shaw and Nicholson 2009: 227-371, 390-494, 505-673 Stampolidis & Tasoulas (eds.) 2014: 272-335 (tools)

Ulrich in Oleson 2008: 439-64

Van de Guchte and Edging in Wisseman and Williams 1994: 99-120

Wild in Oleson 2008: 465-82

See also Tzedakis and Martlew 2002 for a very informative exhibition catalogue on

prehistoric subsistence and Hurcombe 2014

24 Thu May 8 CYA

Wrapping up and review (+The Guide)

Description

This aim of this session is to go through all the key points that we discussed throughout the course, answer and questions and eventually express our own thoughts and conclusions.

Recommended bibliography

Humphrey 2006: 117-134

N.B.: The course schedule, in terms of subjects and readings, may be subject to change to benefit student learning and to keep up to date with current research.

COURSE BIBLIOGRAPHY

All books are available in the CYA library, unless otherwise stated

[pdf] Available in pdf format only

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