

College Year in Athens
Spring 2023

ARCH372
Ancient materials and technologies in the Greek world



© RMN, Musée du Louvre

Instructor: Angelos Papadopoulos, PhD
Email: angelos.papadopoulos@cyathens.org

1. 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 artifact 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 artifacts 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 specialize 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 artifacts, learn various techniques directly from the specialists and examine the final products as exhibited in museums.

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

Learning Outcomes

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

Prerequisites

This course has no prerequisites and no knowledge of foreign languages is required as it is designed to cover all basic knowledge of the topic.

2. Readings for the course

i) Required Reading

For each class/ visit the reading of one paper is required. Ideally, the participants should read these papers before the class, 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>

3. Assessment

i) Attendance and participation (see also page 25)

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. In case of absence, you are required to deliver a summary of the *Required Reading* of the day you missed. 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. Unexcused absences may result in a lower grade, 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 (see also page 27)

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 1500 words (*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 3 bibliographic references 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, 21 March 2023

Research paper submission deadline: Tuesday, 25 April 2023

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, 16 March 2023

iv) Group Presentations (see also page 26)

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: artifacts, 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 per person, 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, 11 May 2023

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

- Class attendance & participation 15%
- Research paper 30%
- Mid-term quiz 15%
- Group presentation 15%
- The Guide 25%

Total: 100%

4. Upgrading the course

If you wish, you can attend this course 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.

5. 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.

6. Hints and tips

Access to bibliography

Libraries:

- Library of the College Year in Athens and our very own Reserve Shelf.
- Blegen Library of the American School of Classical Studies at Athens (for access and arranged visits talk to the CYA Librarian Ms Georgia Katsarou, Monday to Thursday 09.00-16.00).

Academic Accommodations

a) Policy 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 (Check the Student Handbook, p. 7).

b) 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

Outdoor activities

There will be plenty of outdoor activities, such as field trips 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.

Student-Instructor collaboration

Students are encouraged to discuss with the instructors any aspect of the course that may be of special interest to them throughout the programme. There will be plenty of time between classes and site, museum or laboratory visits to do so.

CYA field study

As ARCH372 explores places of archaeological interest, CYA field study is directly connected to it. Taking notes and photographs is always a good idea.

Suggested essay /presentation topics

- Bronze vs iron technologies in the ancient world
- Mineral resources and trade routes
- Traveling artisans?
- The role of craftsmen in the Athenian Democracy of the 5th c. BCE
- Conservation of metal objects
- Construction of the Athenian trireme

- Mycenaean dams and bridges
- The tools of a carpenter
- Tools of work throughout the centuries
- Medicinal plants
- Different types of coins
- Minoan vs Mycenaean wall paintings
- Making a kouros/ kore
- The weapons set of a hoplite
- The olive tree/ vine and its products
- Fire, fuel and the landscape
- Describe the major buildings at a major harbor and the professions/ duties of the people who were related to it

CYA Syllabus

7

Short calendar of activities

Agora Ancient Agora of Athens

BSA British School at Athens

CYA College Year in Athens (Vassileos Konstantinou building, VK1)

Floisvos Floisvos harbor (Phaliron)

Lab College Year in Athens, Arktinou Street workshop

MCA Museum of Cycladic Art

NAM National Archaeological Museum

No.	Date	Topic	Venue/ Notes
1	31 Jan (Tu)	Introduction to the course	CYA

2	2 Feb (Th)	Ancient city, modern city	Athens metro stations
3	7 Feb (Tu)	Raw materials and trade routes	CYA
4	9 Feb (Th)	Weapons and Warfare I	NAM
5	21 Feb (Tu)	Weapons and Warfare II	CYA
6	23 Feb (Th)	Space. From private to public I	Athens metro stations
7	28 Feb (Tu)	Space. From private to public II	Agora
8	2 Mar (Th)	Technologies and everyday life	CYA and MCA
9	7 Mar (Tu)	Working in the dark: Lamps and light	Lab *Workshop
10	9 Mar (Th)	Building a house: Mudbrick	Lab *Workshop
11	14 Mar (Tu)	Wall paintings: a passport to the past	Lab *Workshop
12	16 Mar (Th)	Making a fresco (+Mid-term quiz)	Lab *Workshop
13	21 Mar (Tu)	Ancient Pyrotechnology	Lab *Workshop
14	23 Mar (Th)	Building a sanctuary	Acropolis of Athens
15	4 Apr (Tu)	Cranes, colours, tools and (lack of) blueprints	New Acropolis Museum
16	6 Apr (Th)	Organic materials, medicine and subsistence	CYA
17	18 Apr (Tu)	Working at a laboratory	BSA ***(TBC)
18	20 Apr (Th)	Greek metallurgy: techniques and products I	Lab *Workshop
19	25 Apr (Tu)	Greek metallurgy: techniques and products II (+Research paper)	Lab *Workshop
20	27 Apr (Th)	Metals make the world go round	CYA
21	2 May (Tu)	Ships, ship-sheds and harbours	CYA
22	4 May (Th)	An Athenian trireme	Floisvos ***(TBC)
23	9 May (Tu)	Value and currency	Numismatic Museum
24	11 May (Th)	Wrapping up and review (+The Guide)	CYA

Course schedule

1) 31 January 2023 (Tuesday)

Venue: 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

Food for thought

- To what extent environmental factors affect the shaping of cultures and civilizations?

2) 2 February 2023 (Thursday)

Venue: 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 other 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

Recommended bibliography

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

Food for thought

- Which are the major architectural features of a Roman bath complex? Which is its social role?

3) 7 February 2023 (Tuesday)

Venue: 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 travel long distances in order to acquire them so that they could transform them to finished products or 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

Food for thought

- Why do people export and import raw materials?
- Ivory in Greek art. Its presence and significance in Greek societies.

4) 9 February 2023 (Thursday)

Venue: NAM

Weapons and warfare I

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 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 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

Food for thought

- Why warfare technologies change through time?

14-18 February: Field Study to the Peloponnese

5) 21 February 2023 (Tuesday)

Venue: CYA

Weapons and warfare II

Description

Warfare is a major part in the history of humankind. 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

Food for thought

- Choose a specific type of weapon (e.g. swords) and discuss its evolution through time.

6) 23 February 23 (Thursday)

Venue: 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

Food for thought

- Recycling of building materials and constructions. What do you think happened to a site from period to period?

7) 28 February 2023 (Tuesday)

Venue: Agora of Athens

Space. From private to public II

Description

The Agora of Athens, the civic, cultural, economic and political center 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

Food for thought

- The temple of Hephaistos on the hill above the Agora. Why is it there and what is the connection with Goddess Athena?
- Why there are clear borders between private and public space in the Agora?

8) 2 March 2023 (Thursday)

Venue: CYA and MCA

Technologies and everyday life

Description

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. B.C. 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 marvellous 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

Daily life in Antiquity (MCA thematic essay) <http://www.cycladic.gr/>

Food for thought

- The life of a craftsperson in Classical Greece: How important he was for the local community? Discuss with case studies.

12

CYA Syllabus

9) 7 March 2023 (Tuesday)

Venue: Lab

Working in the dark: Lamps and light

Description

How did people move, work and interact without the daylight? 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/AncientLa>

Food for thought

- What kind of fuel would people use for their lighting from time to time? ·
- Imagine the streets of a prehistoric town at night

10) 9 March 2023 (Thursday)

Venue: Lab

[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

Food for thought

Mudbrick in ancient and modern architecture: similarities and differences

11) 14 March 2023 (Tuesday)

Venue: Lab

[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)

Food for thought

- Describe the fresco technique.
- Colour and painting in ancient Greece

12) 12 March 2023 (Thursday)

Venue: Lab

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 with 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

Food for thought

- What information can we receive from the study of wall paintings concerning ancient technologies and craftsmanship?

13) 21 March 2023 (Tuesday)

Venue: Lab

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 depended on it in order to produce everyday utensils, tools, weapons, jewelry and medicine. Even one of the most basic needs, subsistence, is heavily dependent 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 required.

14

Syllabus

Required reading

Roberts and Radivojevic 2015: 299-306

Recommended bibliography

Renfrew and Bahn 2003: 335-38

Food for thought

- Could the search for fuel have an impact on the palaeo-environment and the landscape?

14) 23 March 2023 (Thursday)

Venue: Acropolis of Athens

Building a sanctuary

Description

The site of the Acropolis has been for centuries the religious center 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

Food for thought

- You are one of the skilled workers working on the site of the Acropolis in 440 B.C. Describe what happens in the area during the construction of the Parthenon.

23 March – 1 April: Field Study to Northern Greece/ Thessaloniki

15) 4 April 2023 (Tuesday)

Venue: New Acropolis Museum

Cranes, colors, 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 colors. Additionally, a study of the National Polytechnic School attempts to

15

Syllabus

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)

Food for thought

- You are one of the skilled workers working on the site of the Acropolis in 440 B.C. Describe what happens in the area during the construction of the Parthenon.

16) 6 April 2023 (Thursday)

Venue: CYA

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 did 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 catalog on prehistoric subsistence and Hurcombe 2014

16

Syllabus

Food for thought

- How can scientific methods help us reconstruct the diet of past societies?

17) 18 April 2023 (Tuesday)

Venue: BSA (TBC)

Working at a laboratory

Description

During this class we shall visit a laboratory of archaeological science and discuss what information we can 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

Food for thought

- What information can we get from the study of ceramics about their manufacture, trade networks and exchange mechanisms in ancient societies?

18) 20 April 2023 (Thursday)

Venue: Lab

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

(+research essay)

Description

One of the most interesting subjects of discussion is the case of the traveling 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

17

Syllabus

Food for thought

- Which are the main tools of the metalsmith?

19) 25 April 2023 (Tuesday)

Venue: Lab

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/archaiia-technologia>

Food for thought

- Which metals were considered precious in ancient times?

20) 27 April 2023 (Thursday)

Venue: CYA

Metals make the world go round

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

Food for thought

- Bronze Age and Iron Age: Which are the major differences and similarities from a technological perspective?
- Sources of gold and silver in Greece.

21) 2 May 2023 (Tuesday)

Venue: CYA

[Ships, ship-sheds and harbors](#)

Description

18

Syllabus

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 traveled 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 boats. Of crucial importance is to examine the anchorages, harbors and ship-sheds 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

Food for thought

- The introduction of sail. What changed in the history of seafaring?

22) 4 May 2023 (Thursday)

Venue: 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 catalog).

Food for thought

- Apart from Piraeus, where else do we have major harbors in Greece? ·
- Trireme: A masterpiece of nautical technology

23) 9 May 2023 (Tuesday)

Venue: 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

19

Syllabus

passing from pre-monetary 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

Food for thought

- Which metals have been used in minting and for what reason(s)?

24) 11 May 2023 (Thursday)

Venue: 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 questions and eventually express our own thoughts and conclusions.

Recommended bibliography

Humphrey 2006: 117-134

Syllabus

Course bibliography

All books are available in the CYA library, unless otherwise stated **[pdf]** Available in pdf format only

Aruz, J., K. Benzel and J.M. Evans (eds.) (2009) *Beyond Babylon. Art, Trade and Diplomacy in the Second Millennium B.C.* New York and New Haven: The Metropolitan Museum of Art and Yale University Press.

Barber, E.J.W. (1991) *Prehistoric Textiles. The Development of Cloth in the Neolithic and Bronze Ages. With Special Reference to the Aegean*, Princeton: Princeton University Press.

Bass, G.F. (1998) "Sailing Between the Aegean and the Orient in the Second Millennium BC." in E.H. Cline and D. Harris-Cline (eds.) *The Aegean and the Orient in the Second Millennium: Proceedings of the 50th Anniversary Symposium, Cincinnati, 18-20 April 1997. Aegaeum 18*. Liège: Université de Liège, Histoire de l'art et archéologie de la Grèce antique; University of Texas at Austin, Program in Aegean Scripts and Prehistory, 183-191. **[pdf]**

Betancourt, P.P. (1985) *The History of Minoan Pottery*. Princeton University Press.

Bevan, A. (2007) *Stone vessels and values in the Bronze Age Mediterranean*. Cambridge University Press.

Korres, M., Ch. Bouras, A. Orlandos and C. Hadjiaslani (1989) *The construction of an ancient Greek temple*. Athens: Hellenic Ministry of Culture and Sports.

Brouskare, M. (1997) *The monuments of the Acropolis*. Athens: Ministry of Culture, Archaeological Receipts Fund (transl. D. Hardy).

Cahill, N. (2002) *Household and city organisation at Olynthus*. New Haven: Yale University Press.

Camp, J.M. (2001) *The archaeology of Athens*. New Haven and London: Yale University Press.

Caple, Ch. (2006) *Objects. Reluctant witnesses to the past*. Routledge.

Casson, L. (1995) *Ships and Seamanship in the ancient world*. Baltimore and London: The J. Hopkins University.

Chlouveraki, S. and S. Lugli (2009) 'Gypsum: A jewel in Minoan palatial architecture: Identification and characterization of its varieties', in: Y. Maniatis (ed.) *ASMOSIA VII: Actes du VIIe colloque international de l'ASMOSIA organisé par l'École française d'Athènes, le National Center for Scientific Research "DIMOKRITOS", la 18e éphorie des antiquités préhistoriques et classiques (Kavala)*

Syllabus

et l' Institute of Geology and Mineral Exploration, Thasos, 15-20 septembre 2003. Proceedings of the 7th International Conference of Association for the Study of Marble and Other Stones in Antiquity organized by the French School of Athens, the National Center for Scientific Research "DIMOKRITOS", the 18th Ephoreia of Prehistoric and Classical Antiquities (Kavala) and the Institute of Geology and Mineral Exploration, Thassos, September 15-20, 2003, BCH Suppl. 51, Athènes: École française d' Athènes, 657-668. [pdf]

Cline, E. (ed.) (2010) *The Oxford Handbook of the Bronze Age Aegean*. Oxford University Press.

Cronyn, J.M. (1995) *The Elements of Archaeological Conservation*. London: Routledge.

Cuomo, S. (2007) *Technology and culture in Greek and Roman antiquity* (key themes in Ancient History), Cambridge: Cambridge University Press.

Doumas, Ch. (1992) *The Wall Paintings of Thera*. Athens: The Thera Foundation Petros M. Nomikos.

Evely, D. (ed.) (1999) *Fresco: A passport into the past. Minoan Crete through the eyes of Mark Cameron*. Athens: British School at Athens. N.P. Goulandris Foundation - Museum of Cycladic Art.

Henderson, J. (2000) *The science and archaeology of materials: an investigation of inorganic materials*. London: Routledge.

Humphrey J.W., J.P. Oleson and A.N. Sherwood (1999, 2nd ed.) *Greek and Roman Technology: a sourcebook*. London: Routledge.

Humphrey, J.W. (2006) *Ancient Technology*. Greenwood Guides to Historic Events of the Ancient World. Greenwood Press.

Hurcombe, L.M. (2014) *Perishable material culture in prehistory. Investigating the missing majority*. London and New York: Routledge.

Hurcombe, L. M. (2007) *Archaeological artefacts as material culture*. London and New York: Routledge.

Immerwahr, S.A. (1989) *Aegean Painting in the Bronze Age*. Pennsylvania State University Press.

Kaltsas, N. (2005) *The National Archaeological Museum*. Athens: EFG Eurobank Ergasias S.A. / John S. Latsis Public Benefit Foundation.

Kassianidou, V. and A.B. Knapp (2005) 'Archaeometallurgy in the Mediterranean. The social context of mining, technology and trade', in: E. Blake and A.B. Knapp (eds.) *The Archaeology of Mediterranean Prehistory*. Blackwell Publishing. 215-51.

- Klein, N.L. (2016) “How buildings were constructed”, in: M.M. Miles (ed.) *A companion to Greek architecture*, Willey-Blackwell, 105-118.
- Knappett, C. and L. Malafouris (eds.) (2008) *Material Agency: Toward a Non Anthropocentric Approach*. Springer.
- Love, S. (2013) ‘The performance of building and technological choice made visible in mudbrick architecture’, *Cambridge Archaeological Journal* 23.2: 263-282.
- Lovén, B. (2015) *Piraeus. The port of triremes*. University of Copenhagen. Hellenic Maritime Museum
- Oleson, J.P. (ed.) (2008) *The Oxford Handbook of Engineering and Technology in the Classical World*. Oxford University Press
- Morrison, M. and Williams, R.T. (1968) *Greek oared ships. 900-322 B.C.* Cambridge University Press.
- MacGregor A. (1985) *Bone, antler, ivory and horn. The technology of skeletal materials since the Roman period*. London: Croom Helm-New Jersey: Barnes & Noble.
- Mee, C. (2011) *Greek Archaeology. A Thematic Approach*. Wiley-Blackwell.
- Michailidou, A. (2005) *Weight and Value in pre-coinage societies. An Introduction*. Meletemata 42. Research Centre for Greek and Roman Antiquity. National Hellenic Research Foundation. Athens: Diffusion de Bocard.
- Michailidou, A. (2008) *Weight and Value in pre-coinage societies. Vol. II. Sidelights on measurement from the Aegean and the Orient*. Meletemata 61. Research Centre for Greek and Roman Antiquity. National Hellenic Research Foundation. Athens: Diffusion de Bocard.
- Miller H. M-L. (2007) *Archaeological approaches to technology*. London and Amsterdam: Elsevier/Academic Press.
- Mountjoy, P.A. (1993) *Mycenaean Pottery. An Introduction*. Oxbow Books.
- Nutton, V. (2006) *Ancient Medicine*. London and New York: Routledge.
- Pakkanen, J. (2013) “The Economics of Shipshed Complexes: Zea, a Case Study”, in: Blackman, D., B. Rankov, K. Baika, H. Gerding & J. Pakkanen (eds.) *Shipsheds of the Ancient Mediterranean*. Cambridge: Cambridge University Press, 55–75. **[pdf]**
- Pentedeke, A. (2011) ‘Links of Clay in Neolithic Greece: The Case of Platia Magoula Zarkou’, in: A. Brysbaert (ed.) *Tracing Prehistoric Social Networks through*

Syllabus

Preziosi, D. and L. Hitchcock (1999) *Aegean art and architecture*. Oxford: Oxford University Press.

Renfrew, C. and P. Bahn (2001, 3rd ed. rev.) *Archaeology: Theories, Methods and Practice*. London: Thames and Hudson.

Roberts, W.B. and Radivojevic, M. (2015) ‘Invention as a Process: Pyrotechnologies in Early Societies’, *Cambridge Archaeological Journal* 25.1: 299-306.

Schreiber, T. (1999) *Athenian vase construction*. The J.P. Getty Museum

Spawforth, T. (2006) *The Complete Greek temples*. London: Thames and Hudson.

Stampolidis, N.Ch. and Y. Tasoulas (eds.) (2014) *Hygeia. Health, illness, treatment. From Homer to Galen*. Athens: Museum of Cycladic Art and Hellenic Ministry of Culture.

Stampolidis, N.Ch., D. Tsangari and Y. Tassoulas (eds.) (2017) *Money. Tangible symbols in ancient Greece*. Athens: Alpha Bank & Museum of Cycladic Art.

Tzedakis, Y. and Martlew, H. (eds.) (2002) *Minoans and Mycenaeans. Flavours of their time*. Athens: Ministry of Culture.

Vlachopoulos, A.G. and F. Georma (2012) “Jewellery and Adornment at Akrotiri, Thera: The Evidence from the Wall Paintings and the Finds”, in: M.-L. Nosch and R. Laffineur (eds.) *Kosmos: Jewellery, Adornment and Textiles in the Aegean Bronze Age. Proceedings of the 13th International Aegean Conference/13e Rencontre égéenne internationale, University of Copenhagen, Danish National Research Foundation's Centre for Textile Research, 21–26 April 2010*, *Aegaeum* 33, Leuven and Liege: Peeters, 35–42. [\[pdf\]](#)

von Rüden, C., J. Becker, J. Jungfleisch (2018) “Tracing Technoscapes in the Production of Eastern Mediterranean Wall Paintings. An Introduction”, in: J. Becker, J. Jungfleisch, C. von Rüden (eds) *Tracing Technoscapes*, Leiden: Sidestone, 7-26.

Wissemann, S.U. and Williams S.W. (eds.) (1994) *Ancient technologies and archaeological materials*. Gordon and Breach Science Publishers.

Scoring Rubric for class participation

Points	5	4	3	2	1
Performance during classes(*)	Attends class regularly and always contributes to the discussion	Attends class regularly and frequently contributes to the discussion	Attends class regularly and sometimes contributes to the discussion	Attends class regularly and rarely contributes to the discussion	Attends class regularly and never contributes to the discussion

Contribution in the discussion is defined as:

1. raising relevant questions
2. discussing relevant issues
3. expanding the class' perspective
4. providing alternative interpretations and ideas
5. synthesizing data from previous classes
6. Refer to the readings

You are also expected to participate lively (level 1-5) in all activities.

(*) You are expected to attend all classes

Category	Scoring Criteria	Points	Score
Organization (15 points)	The type of presentation is appropriate for the class and the relevant audience.	1-5	
	Information is presented in a logical sequence.	1-5	
	Presentation has a beginning, a middle part and an end	1-5	
Content (45 points)	Introduction is attention-getting, lays out the problem well, and establishes a framework for the rest of the presentation.	1-5	
	Technical terms are well-defined in language appropriate for the target audience.	1-5	
	Presentation contains accurate and correct information.	1-10	
	Material included is relevant to the overall topic	1-10	
	Selection of case study (e.g. a specific artifact) relevant to the topic	1-10	
	There is a clear conclusion summarizing the presentation.	1-5	
Presentation (30 points)	Speaker maintains good eye contact with the audience and is appropriately animated (e.g., gestures, moving around, etc.).	1-5	
	Speaker uses a clear, audible voice.	1-5	
	Delivery is poised, controlled, and smooth.	1-5	
	Good language skills and pronunciation are used.	1-5	
	Visual aids are well prepared, informative, effective, and not distracting.	1-5	
	Length of presentation is within the assigned time limits.	1-5	
Response (10 points)	Speaker understood the questions and responded in a clear and organized manner	1-10	
Score	Total Points	100	

Comments:

Syllabus