



北京大学  
PEKING UNIVERSITY

科学技术与医学史系

DEPARTMENT OF HISTORY OF SCIENCE,  
TECHNOLOGY AND MEDICINE

## HISTORY OF WESTERN SCIENCE, TECHNOLOGY AND MEDICINE

Academic Year: 2023-2024

Instructor: 马大年 (Daniele Macuglia)

**ORAL EXAM**

**SAMPLE QUESTIONS**

(Ancient history to the early modern period)



The oral examination consists of the discussion of three questions similar to those listed below. The student may choose the first question, and the entire exam is expected to take approximately 40 minutes. The student's performance on the exam will depend primarily on her/his ability to think critically and communicate effectively. In addition, the student should demonstrate a strong grasp of relevant primary and secondary sources.

### **Ancient Greece**

- What factors contributed to the emergence of natural philosophy in Greece and why, in your opinion, did this development occur in that particular place and time?
- What were the key contributions of the pre-Socratic philosophers to our understanding of the natural world, and how did their ideas influence later natural philosophers?
- What is the importance of Aristotelian logic for understanding and evaluating arguments? How has Aristotelian logic been used natural philosophy?
- What are the similarities and differences between Plato and Aristotle's views on the nature of reality and knowledge?
- How did the ancient Greeks distinguish between metaphysics and natural philosophy? What are the key concepts and concerns of each discipline?
- How did the patron-client relationship between Alexander the Great and Aristotle shape Aristotle's philosophical work?
- What were some of the most important studies that took shape in Alexandria, and how did they influence later thought? In particular, discuss the case of Euclid's *Elements*.
- What are the challenges in reconstructing Archimedes' life and work, given the many legends that surround him?

### **The Roman period and the Islamic Golden Age**

- What can we learn about the attitudes of Roman intellectuals towards Greek culture from the writings of Cicero and Lucretius?
- How did Galen's understanding of the Hippocratic theory of humors differ from that of Hippocrates himself?
- How did Galen's teleological approach to medicine influence its reception in the early Christian world?
- What was the impact of Avicenna's *Canon of Medicine* on the development of medical knowledge in the Islamic world and Western Europe?
- How did Averroes' commentaries on Aristotle's works revive interest in Aristotelian philosophy in medieval Europe?



## The Middle Ages

- How did the Carolingian Renaissance transform European education? What were the key changes to the curriculum, teaching methods, and institutions of learning?
- What were the *trivium* and *quadrivium*, and why were they considered the foundation of the liberal arts in the Middle Ages?
- What are the lasting legacies of Robert Grosseteste and Albertus Magnus?
- How did Roger Bacon's work build on the work of Alhazen? What are the key similarities and differences between their approaches?
- How did Scholasticism, and Thomas Aquinas in particular, shape the development of natural philosophy in the Middle Ages?
- How did Ockham's razor influence the development of metaphysics? Do you agree with his view that metaphysical entities should be posited only if they are necessary to explain observed phenomena?
- How did the Black Death shape the work of Nicole Oresme? What are some of the unique challenges and opportunities that he faced as a scholar working in the aftermath of the plague?

## The “Scientific Revolution”

- What were the main limitations of Copernicus' three-motion system of the Earth, despite its attractive solutions to some of the *Almagest's* difficulties?
- How do Tycho Brahe's observations of new stars and the sighting of a supernova in 1572 fit into the Aristotelian framework of the time?
- While the ancient Greeks and early modern thinkers (e.g., Niccolò Tartaglia and Christopher Clavius) also linked physics and astronomy to mathematics, why is Galileo's case so special?
- Both Galileo and Johannes Kepler exhibit Neoplatonic characteristics, but in what ways do they differ?
- What made the discovery of the Medicean stars so significant, and what was the importance of observing the phases of Venus?
- Explore the advantages and limitations of patronage, focusing on its implications for natural philosophy during the early Renaissance through the Counter-Reformation.
- How does the Baconian method differ from the Galilean method?
- Is it justifiable to speak of a scientific revolution?

Students in the course will be presented with additional sample questions, up to the 21st century.