SCIENCE LITERATURE: ARATUS

Instructor: Charilaos E. Avgerinos
Associate Professor

COURSE OUTLINE

1. GENERAL

SCHOOL	PHILOSOPHY		
ACADEMIC UNIT	DEPARTMENT OF PHILOLOGY		
LEVEL OF STUDIES	GRADUATE		
COURSE CODE	**ΑΕΦ005**	**SEMESTER**	1st
COURSE TITLE	SCIENCE LITERATURE: ARATUS		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	10
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised, general knowledge, skills development*	Special background
PREREQUISITE COURSES:	NONE
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Modern Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES (in Modern Greek)
COURSE WEBSITE (URL)	https://ecourse.uoi.gr/course/view.php?id=2992

2. LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

Upon successful completion of the course students should be able to:

• Know the evolution of the relevant genre in its historical progress
• Understand the specialized terminology of scientific texts (with a special focus on astronomy and astrology) and be able to discern its evolution through the centuries.
• Recognize the evolution and the stages of Scientific Literature and its gradual connection to the epic language and meter (through the production of

neologisms and metrical word-types in the hexameter).

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

Search, analyze and synthesize data and information using necessary technologies.

- Decision-making.
- Autonomous work.
- Teamwork.
- Generation of new research ideas.
- Respect for diversity and multiculturalism.
- Promotion of free, creative, and inductive thinking.

3. SYLLABUS

The starting point of the seminar lies in ancient Greek "scientific" thought, which we attempt to reconstruct from certain passages of archaic "cosmological" and "astronomical" texts (Pherekydes of Syros, Cleostratus of Tenedos, Ps.-Hesiod, etc.). This introduction is rather justified, because Aratus adopted the role of philosopher-poet. This way, from the post-Homeric worldview, and through relevant fragments attributed to Empedocles and Parmenides, we are led to the presentation of the mathematical and philosophical sources of the Aratean *Phaenomena*, focusing on this poet's attested dependence on Eudoxus' *Phaenomena* and another work on weather signs, as well as on treatises belonging to the genre of the *Parapegma*. The progress and the importance of Astronomy and Astrometeorology in the environment of the Hellenistic kingdoms are also concisely presented. Consequently, the seminar examines the specific thematic categories contained in the poem. In the *Phaenomena* Hellenistic poetics and scientific content are successfully combined. After all, a characteristic of the period was the interest in technical treatises, a tendency which Aratus' poem rather strengthened, rekindling the ever-present interest in the didactic epic. As regards especially the *Phaenomena* we examine the application of myth in astronomy (both as a typical feature of the literary genre and as a poetic invention – especially in the case of the catasterism of Dike-Parthenos), the Hellenistic mannerism in the utilization and adaptation of the

Hesiodic *Works and Days*, and the special stylistic means employed by the poet in the presentation of his purely technical material. Finally, a brief examination of the bilingual survival of the poem (in its Greek and its Latin tradition) is included, with an emphasis on both the commenting of the text (*Scholia vetera* etc.), and its extant translations (by Cicero, Germanicus, Avienus, the so-called *Aratus Latinus*).

1. INTRODUCTION:
Students are introduced to the diverse nature of the Aratus' *Phaenomena*, which combines the characteristics and the conventions of scientific literature (Astronomy and Astrometeorology), with those of the didactic epic and of the Hellenistic poetics as well. Theoretical issues concerning the specific genres are addressed, as well as the influence of the Hellenistic culture and the establishment of the great Libraries. A thorough presentation of the predecessors of this genre is furthermore conducted as well as of the relation of Astronomy to Philosophy.

2. ANALYSIS OF SELECTED TEXTS: 1) The precursors of the genre (cosmological-astronomical poetry): Pherecydes of Syrus, Cleostratus of Tenedos, Ps.-Hesiod. Orphic grafments (with a reading of their passages from the edition of Diels – Kranz, *Die Fragmente der Vorsokratiker*). 2) Basic principles of ancient Cosmology and Astronomy. 3) The astral mythology and the tradition of the *Catasterisms* (starting with Homer and Hesiod). 4) The beginnings of the literature concerning weather signs and the possible sources of Aratus (Aristotle, Eudoxus, Euclid). 5) Selected passages from the two "parts" of the *Phaenomena*, the purely astronomical (actually, a basic uranography) and the *prognostica*: (a) the poetic and mythological passages *per se* (the opening verses, the myth of Dike-Parthenos, the brief catasteristic myths) (b) technical sections (the axis of the earth, the celestial circles (equator, tropics, polar circles, the κόλουροι, the ἀράχνη of Eudoxus).

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	• Face-to-face. • Asynchronous distance learning through the electronic platform ecourse. • Synchronous distance learning through the electronic platform Microsoft Teams, when required.

<table>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
Use of ICT in teaching, laboratory education, communication with students</td><td>• Support of the learning process through the electronic platform ecourse. (Uploading of lecture notes and other course material)
• Communication with students via e-mail.
• Posting of announcements on the electronic platform ecourse.</td></tr>
<tr><td>TEACHING METHODS
The manner and methods of teaching are described in detail.
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.

The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity</th><th>Semester workload</th></tr>
<tr><td>Lectures in interaction with students</td><td>39</td></tr>
<tr><td>Weekly Non-directed Study</td><td>39</td></tr>
<tr><td>Independent Study of Secondary Literature</td><td>72</td></tr>
<tr><td>Final Essay</td><td>100</td></tr>
<tr><td>Course total
(25 hours per credit)</td><td>250
(10 ECTS)</td></tr>
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<tr><td>STUDENT PERFORMANCE EVALUATION
Description of the evaluation procedure

Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</td><td>A final essay written in Modern Greek on a subject relevant to the content and objectives of the course.

The essay’s evaluation criteria are thoroughly explained during the course and their essays are returned to students with corrections and grades.</td></tr>
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5. ATTACHED BIBLIOGRAPHY

Bibliography:

As regards specifically the astral myths, relevant Bibliography has been posted on the caurse’s e-course page (see below).
On the specialized bibliography concerning Aratus and the so-called “*Aratea*” students are forwarded to the relevant “A Hellenistic Bibliography: Aratus and Aratea”, hosted at the Department of Classics of Trinity College Dublin (created and mainted by Dr. Martine Cuypers):
https://www.tcd.ie/classics/research/bibliography.php

(see also:
https://sites.google.com/site/hellenisticbibliography/hellenistic/aratus-and-aratea).

Furthermore, students are able to draw material from the Bibliography contained in C. E. Avgerinos, Τα Φαινόμενα του Αράτου στους σύγχρονους και τους μεταγενέστερούς του, Athens 2014); this book has been posted on e-course:
https://ecourse.uoi.gr/course/view.php?id=2992.