



SUBJECT DATASHEET

Cosmic time travel

BMEGT41V107

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name

Cosmic time travel

ID (subject code)

BMEGT41V107

Type of subject

contact lessons

Course types and lessons

<i>Type</i>	<i>Lessons</i>
Lecture	2
Practice	0
Laboratory	0

Type of

assessment

seminar grade

Number of

credits

2

Subject Coordinator

<i>Name</i>	<i>Position</i>	<i>Contact details</i>
-------------	-----------------	------------------------

Dr. Kutrovátz Gábor	assistant professor	kutrovatz.gabor@gtk.bme.hu
---------------------	---------------------	----------------------------

Educational organisational unit for the subject

Department of Philosophy and History of Science

Subject website

<https://www.filozofia.bme.hu/targyak>

Language of the subject

magyar - HU

Curricular role of the subject, recommended number of terms

Programme: **Elective subjects**

Subject Role: **Elective**

Recommended semester: **0**

Direct prerequisites

Strong None

Weak None

Parallel None

Exclusion None

Validity of the Subject Description

Approved by the Faculty Board of Faculty of Economic and Social Sciences, Decree No: 580485/10/2023 registration number. Valid from: 28.06.2023.

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

Introduce students into an essential component of the history of sciences, i.e. the development of Western astronomy and cosmology from antiquity to the early modern era., as well as to the perspectives and research methods peculiar to this disciplinary field.

Academic results

Knowledge

1. The student knows the conceptual and methodological fundamentals of the natural sciences.
2. the occurrences and the consequences of the relations between science, history,, society and culture on various levels.
3. how the discipline being studied fits into a larger disciplinary and social scheme, how it relates to the neighbouring fields, how these fittings give rise to using certain contexts.
4. how to navigate themselves among the plethora of scientific information and desinformation.

Skills

1. Students acquire the skills to use professional terms, basic concepts and advanced elements of the special terminology of the profession.
2. to see and treat science in its embeddedness, to use an interdisciplinary approach.
3. to analyze, evaluate, draw conclusions and synthesize explanations in their professional work.
4. to provide a critical analysis of information by using a wide array of well-founded techniques.
5. to participate in lifelong learning.
6. to use a multi-sided, interdisciplinary approach to identify specific problems, to explore and define the detailed theoretical and practical background that is needed to solve these problems.
7. to discover facts and basic relationships by applying the theories and methods learned. To systematize, to analyze, to draw conclusions, to give critical remarks, to prepare proposals of decision-making and to make decisions both in a routine and in a non-routine - domestic and international - environment.

Attitude

1. Accepts and consistently and plausibly represents the diversity of the perspectives of social sciences in the related narrower and wider environment.
2. Demonstrates an open mind to critical self-evaluation, to various forms of training, to the self-help forms of intellectual worldview. Endeavours for self-development in these areas.
3. Has problem-centric perspective and problem-solving thinking.

Independence and responsibility

1. Develops a historically and politically consistent individual opinion in the narrow disciplinary niche that helps to develop self and environment.
2. Becomes autonomous, constructive and assertive both in intra- and extra-institutional forms of cooperation.
3. Becomes self-reliant in work besides being constantly critical and correcting own work.
4. Takes the responsibility in forming and justifying professional views.
5. Takes the responsibility for own analyses, conclusions and decisions.

Teaching methodology

Written and oral communication.

Materials supporting learning

- 1. Slide-ok a kurzus hivatalos elektronikus felületén. Slides on the Moodle site of the subject.
- 2. Vassányi M. – Kutrovátz G.: A világ bizonyos szimmetriája. A kora újkori csillagászat története válogatott források tükrében. Budapest: Typotex. 2021.
- 3. Simonyi K.: A fizika kultúrtörténete. Gondolat, 1978 vagy Akadémiai, 1998.
- 4. Duhem, P.: A jelenségek megőrzése. Kairosz, 2005.
- 5. Koestler, A.: Alvajárók. Európa Könyvkiadó, 1996.
- 6. Kuhn, T.: The Copernican Revolution. Harvard, 1957.
- 7. Dreyer, J.L.E.: A History of Astronomy from Thales to Kepler. Dover, 1953.

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

A 2.2. pontban megfogalmazott tanulási eredmények értékelése.

Performance assessment methods

Összegző tanulmányi teljesítményértékelés: a tantárgy és tudás, képesség típusú kompetenciaelemeinek komplex, írásos értékelési módja zárthelyi dolgozat formájában. Mindkét zárthelyi dolgozat eredményének külön-külön is el kell érniük a 40%-ot.

Percentage of performance assessments, conducted during the study period, within the rating

- 1. összegző tanulmányi teljesítményértékelés: 50
- 2. összegző tanulmányi teljesítményértékelés: 50
- összesen: 100

Percentage of exam elements within the rating

Conditions for obtaining a signature, validity of the signature

Issuing grades

Excellent	90
Very good	86-89
Good	70-85
Satisfactory	56-69
Pass	40-55
Fail	0-39

Retake and late completion

A pótlás és javítás rendjét a hatályos TVSZ. szabályozza.

Coursework required for the completion of the subject

részvétel a kontakt tanórákon	28
felkészülés a teljesítményértékelésekre	32
összesen	60

Approval and validity of subject requirements

Consulted with the Faculty Student Representative Committee, approved by the Vice Dean for Education, valid from: 05.06.2023.

III. COURSE CURRICULUM

THEMATIC UNITS AND FURTHER DETAILS

Topics covered during the term

1. Bevezetés. A görög preszókratikus korszak csillagászati és kozmológiai elképzelései 2. A görög tudományos csillagászat születése: az Akadémia korai korszaka 3. A Föld mozgásának kérdése és a nemsztenderd ókori csillagászati elméletek 4. A késői görög csillagászat eredményei: a ptolemaioszi rendszer 5. Csillagászat az európai és a muzulmán középkorban 6. Csillagászat a korai reneszánsz korszakban 7. 1. ZH 8. Kopernikusz munkássága 9. Kopernikusz hatása a 16. században 10. Kepler munkássága 11. Galilei munkássága 12. Csillagászat a tudományos forradalom idején 13. A newtoni szintézis és az új világkép 14. 2. ZH.

Additional lecturers

Approval and validity of subject requirements