

COURSE OUTLINE

1. GENERAL

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| SCHOOL | | | |
| DEPARTMENT | DEPARTMENT OF PHYSICS | | |
| LEVEL OF STUDIES | ISCED level 6 – Bachelor's or equivalent level | | |
| COURSE CODE | Y703-2023 | SEMESTER | 7th Semester |
| COURSE TITLE | Astronomy - Astrophysics | | |
| TEACHING ACTIVITIES If the ECTS Credits are distributed in distinct parts of the course e.g. lectures, labs etc. If the ECTS Credits are awarded to the whole course, then please indicate the teaching hours per week and the corresponding ECTS Credits. | TEACHING HOURS PER WEEK | | ECTS CREDITS |
| | 4 | | 7.0 |
| COURSE TYPE Background, General Knowledge, Scientific Area, Skill Development | Scientific Area | | |
| PREREQUISITES | | | |
| TEACHING & EXAMINATION LANGUAGE: | Greek | | |
| COURSE OFFERED TO ERASMUS STUDENTS: | NO | | |
| COURSE URL: | https://eclass.emt.duth.gr/courses/PHYSICS261/ | | |

2. LEARNING OUTCOMES

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| <p>Learning Outcomes Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.</p> <p>The course provides the fundamentals of both Astronomy and Astrophysics. Concepts of Observational Astronomy are discussed and observing time will be allotted.</p> <p>Upon successful completion of the course, the student will have acquired the ability to solve basic problems in astronomy and astrophysics, explain physical phenomena related to stars and galaxies, and understand the basic principles governing the Universe.</p> |
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General Skills

Name the desirable general skills upon successful completion of the module

Search, analysis and synthesis of data and information,
ICT Use, Adaptation to new situations,
Decision making,
Autonomous work,
Teamwork,
Working in an international environment,
Working in an interdisciplinary environment, Production of new research ideas

Project design and management
Equity and Inclusion
Respect for the natural environment
Sustainability
Demonstration of social, professional and moral responsibility and sensitivity to gender issues
Critical thinking
Promoting free, creative and inductive reasoning

Search, analysis and synthesis of data and information, ICT Use
Autonomous work
Production of new research ideas

3. COURSE CONTENT

Concepts and definitions in Astronomy - Coordinate Systems and Time
Stellar spectra
Solar system, (exo-)planets, satellites, asteroids, comets
The Sun as a typical star and solar phenomena
Stellar evolution and the final stages of stars
Binary stars
Variable stars
Compact stars
Characteristics, classification and evolution of galaxies
Cosmology - Cosmological Models - History and evolution of the Universe

4. LEARNING & TEACHING METHODS - EVALUATION

| TEACHING METHOD Face to face, Distance learning, etc. | Face to face | | | | | | | | |
|--|--|----------|-------------------|----------------------|----|-----------------------------------|----|-------|-----|
| USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) Use of ICT in Teaching, in Laboratory Education, in Communication with students | Use of ICT in Teaching Use of ICT in Communication with students | | | | | | | | |
| TEACHING ORGANIZATION The ways and methods of teaching are described in detail. Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliographic research & analysis, Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive learning, Study visits, Study / creation, project, creation, project. Etc. The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards | <table border="1" data-bbox="855 1592 1394 1877"> <thead> <tr> <th>Activity</th> <th>Workload/semester</th> </tr> </thead> <tbody> <tr> <td>Interactive learning</td> <td>52</td> </tr> <tr> <td>Bibliographic research & analysis</td> <td>73</td> </tr> <tr> <td>Total</td> <td>125</td> </tr> </tbody> </table> | Activity | Workload/semester | Interactive learning | 52 | Bibliographic research & analysis | 73 | Total | 125 |
| Activity | Workload/semester | | | | | | | | |
| Interactive learning | 52 | | | | | | | | |
| Bibliographic research & analysis | 73 | | | | | | | | |
| Total | 125 | | | | | | | | |

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| <p>STUDENT EVALUATION Description of the evaluation process</p> <p>Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay / Report, Oral Exam, Presentation in audience, Laboratory Report, Clinical examination of a patient, Artistic interpretation, Other/Others</p> <p>Please indicate all relevant information about the course assessment and how students are informed</p> | <p>Student evaluation languages Greek</p> <p>Method (Formative or Concluding) Summative</p> <p>Student evaluation methods Rate</p> |
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5. Suggested Bibliography

Eudoxus

Βιβλίο [2267]: Εισαγωγή στη σύγχρονη αστρονομία, Χ.Βάρβογλης, Ι.Σειραδάκης

Βιβλίο [94689784]: Εισαγωγή στη Σύγχρονη Αστροφυσική, Bradley W Carroll, Dale A. Ostlie επιμ.Καζαντζίδης Στυλιανός, Παππάς Γεώργιος

Βιβλίο [280]: ΑΣΤΡΟΦΥΣΙΚΗ ΤΟΜΟΣ Ι, SHU FRANK

Βιβλίο [282]: ΑΣΤΡΟΦΥΣΙΚΗ ΤΟΜΟΣ ΙΙ, SHU FRANK