

## COURSE OUTLINE

### (1) GENERAL

<b>SCHOOL</b>	School of Sciences		
<b>ACADEMIC UNIT</b>	Physics		
<b>LEVEL OF STUDIES</b>	Undgraduate		
<b>COURSE CODE</b>	<b>409</b>	<b>SEMESTER</b>	<b>6,8</b>
<b>COURSE TITLE</b>	Space Weather		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>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</i>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
	4	4	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	General background, special background.		
<b>PREREQUISITE COURSES:</b>	408, 413.		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes (Greek).		
<b>COURSE WEBSITE (URL)</b>	<a href="http://ecourse.uoi.gr/course/view.php?id=785">http://ecourse.uoi.gr/course/view.php?id=785</a>		

### (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b>  <i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> <li>• <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i></li> <li>• <i>Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i></li> <li>• <i>Guidelines for writing Learning Outcomes</i></li> </ul>
<p>The course supplies an introduction to Space Weather. After successful completion the students should be able to:</p> <ul style="list-style-type: none"> <li>● understand the basics physical phenomena and processes in the interplanetary medium and magnetosphere;</li> <li>● understand the causal links of various phenomena along the Sun-Earth line and how they affect Space Weather.</li> </ul>

**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?*

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

Decision-making, Production of free, creative and inductive thinking.

**(3) SYLLABUS**

Introduction to the Physics of the interplanetary plasma. Waves in plasmas. Magnetic reconnection. Shock waves. Solar activity. Solar wind. Interplanetary Coronal Mass Ejections. The terrestrial magnetosphere and its dynamics. Aurora. Space weather and human activities.

**(4) TEACHING and LEARNING METHODS - EVALUATION**

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Face-to-face.	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>		
<b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice,</i>	<b>Activity</b>	<b>Semester workload</b>
	Lectures	70
	Study and analysis of	26

<i>fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i>  <i>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</i>	<b>bibliography</b>	
	<b>Exams</b>	4
	<b>Course total</b>	<b>100</b>
<p align="center"><b>STUDENT PERFORMANCE EVALUATION</b></p> <p><i>Description of the evaluation procedure</i></p> <p><i>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</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	Written work.	

**(5) ATTACHED BIBLIOGRAPHY**

<p>- <i>Suggested bibliography (in Greek):</i>  - <i>Related academic journals:</i></p> <p>Διαστημικός Καιρός, Σημειώσεις από Πανεπιστημιακές Παραδόσεις,  Α. Νίντος, Πανεπιστήμιο Ιωαννίνων</p> <p>Αστροφυσική Πλάσματος, Κ. Τσίγκανος, Κ. Τσίγκανος</p>
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