

COURSE OUTLINE

(1) GENERAL

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|---|---|-----------------|------|
| SCHOOL | SCHOOL OF SCIENCES | | |
| ACADEMIC UNIT | DEPARTMENT OF PHYSICS | | |
| LEVEL OF STUDIES | UNDERGRADUATE | | |
| COURSE CODE | 401 | SEMESTER | 6, 8 |
| COURSE TITLE | GENERAL METEOROLOGY | | |
| INDEPENDENT TEACHING ACTIVITIES <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> | WEEKLY TEACHING HOURS | CREDITS | |
| | 4 | 5 | |
| | | | |
| <i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i> | | | |
| COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i> | Specialised general knowledge | | |
| PREREQUISITE COURSES: | | | |
| LANGUAGE OF INSTRUCTION and EXAMINATIONS: | Greek | | |
| IS THE COURSE OFFERED TO ERASMUS STUDENTS | Yes | | |
| COURSE WEBSITE (URL) | http://ecourse.uoi.gr/course/view.php?id=335 | | |

(2) LEARNING OUTCOMES

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| <p>Learning outcomes</p> <p><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"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> |
| <p>The course provides students with the necessary fundamental knowledge needed for the understanding of the meteorological parameters and all the atmospheric phenomena. Specifically, after the successful completion of the course, the students will be able to:</p> <ul style="list-style-type: none"> • Explain the definitions, the quantitative and qualitative characteristics and the physical meaning of the various meteorological parameters. • Describe the various meteorological phenomena and explain them using the laws of mechanics and thermodynamics. • Describe the large, medium and local scale meteorological processes and justify the prevailing meteorological conditions and the weather changes over a specific region. • Outline the fundamental elements of weather analysis and forecasting and interpret some of the basic forecast maps. |

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?

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| 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 for, analysis and synthesis of data and information, with the use of the necessary technology
 Working independently
 Respect for the natural environment
 Production of free, creative and inductive thinking

(3) SYLLABUS

Weather and climate. Branches of Meteorology. Composition, evolution, height and vertical structure of the atmosphere. Solar radiation and mechanisms of heat transfer in the atmosphere. Air temperature. Atmospheric pressure and sea-level pressure maps. Wind, general circulation and local circulations in the atmosphere. Atmospheric humidity. Atmospheric stability. Clouds and local-scale condensation phenomena. Precipitation. Air masses and fronts. Depressions, anticyclones, tropical cyclones, thunderstorms and tornadoes. Fundamental elements of weather analysis and forecasting. Educational visit to the university meteorological station.

(4) TEACHING and LEARNING METHODS - EVALUATION

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|--|---|--------------------------|
| DELIVERY <i>Face-to-face, Distance learning, etc.</i> | Face to face teaching | |
| USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i> | Asynchronous online learning via Moodle is used for providing the lecture slides and the communication with the students. | |
| TEACHING METHODS <i>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</i> | Activity | Semester workload |
| | Lectures | 39 |
| | Tutorials | 13 |
| | Educational visit | 2 |
| | Study and analysis of bibliography | 50 |
| | Non-directed study | 18 |
| | Examinations | 3 |
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| | Course total | 125 |
| STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> | Written examinations at the end of semester, comprising questions of knowledge and | |

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.

understanding of the course content.

Additionally, two or three projects requiring bibliographic study and analysis are assigned to the students, on a voluntary basis, contributing to the final grade, under the condition that the final examination grade is promotable.

(5) ATTACHED BIBLIOGRAPHY

Suggested bibliography:

Ahrens CD (2013) Meteorology Today. 10th Edition, Brooks/Cole.

Flocas A (1997) Meteorology and Climatology courses. Ziti Editions, Thessaloniki (in Greek).

Sahsamanoglou Ch, Makrogiannis T (1998) General Meteorology. Ziti Editions, Thessaloniki (in Greek).