COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Science		
ACADEMIC UNIT	Physics		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	**10EKA06**	**SEMESTER**	**7**
COURSE TITLE	**Final-year Dissertation I**		

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**
Meetings with supervisor	3	7

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	special background specialized general Knowledge skills development
PREREQUISITE COURSES:	No
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek English for ERASMUS students
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	https://eclass.uoa.gr/courses/PHYS336/

(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 the successful completion of "Final-year Dissertation I", the student:

- has learned to search for appropriate scientific information from relevant scientific literature
- has learned to describe and document the fundamental knowledge related to the subject of the research being conducted
- has learned to summarize existing scientific knowledge and expertise on the subject
- has learned to draft a research plan, develop an appropriate methodology for approaching and investigating a subject under study, and organize an implementation plan for it
- has understood or designed and constructed the tools (software, experimental setup, mathematical tools) required for the completion of the thesis.

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

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working independently (theoretically or experimentally)
- Working in an interdisciplinary environment
- Promotion of free, creative, and inductive thinking
- Understanding of specialized topics

(3) SYLLABUS

The course “Final-year Dissertation I” constitutes the first part of the work leading to the Dissertation Thesis, which is completed in the 8th semester (course “Final-year Dissertation II”)

- Bibliographic search
- Study of literature
- Design and execution of experiments, or execution of theoretical calculations or simulations
- Data analysis/Processing of results

(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<tr><td>DELIVERY
Face-to-face, Distance learning, etc.</td><td>Face-to-face</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
Use of ICT in teaching, laboratory education, communication with students</td><td>Use of ICT at all stages of conducting research for the Dissertation, as well as for communication with students.</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>Guided study/meetings with the supervisor</td><td>42</td></tr>
<tr><td>Independent study of literature, methodology, etc.</td><td>42</td></tr>
<tr><td>Laboratory or computational or theoretical work/study</td><td>91</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Course Total</td><td>175</td></tr>
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</td></tr>
<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>Language of evaluation:
Greek (or English in case of ERASMUS students)

Methods of evaluation
The evaluation of Final-year Dissertation I is based on various criteria, such as the student's understanding of physical concepts/methods/phenomena, their participation in the design and execution of an experiment, a theoretical calculation, or a simulation, etc. Additionally, adherence to the timeline for completing the research project that the student has undertaken as part of their thesis is also assessed.</td></tr>
</table>

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

The suggested bibliography depends on the subject of the Thesis.

- Related academic journals:

The relevant scientific journals depend on the topic of the Thesis. Indicatively mentioned are:

Physical Review Letters
Physical Review D
The Astrophysical Journal
Astronomy and Astrophysics
Monthly Notices of the Royal Astronomical Society
European Physical Journal C
Journal of High Energy Physics
Physics Letters B
Nature Astronomy
The Astronomical Journal
Physical Review X
Nature Physics
Journal of Cosmology and Astroparticle Physics
Physical Review C
Journal of Instrumentation
Classical and Quantum Gravity
Nature Photonics
Physical Review B
Nature Materials
Nature Nanotechnology
Nuclear Physics A
ACS Photonics
Reviews of Modern Physics
Astroparticle Physics
Physical Review A - Atomic, Molecular, and Optical Physics
Physical Review Applied
Advances in Space Research
Space Science Reviews
Applied Physics Letters
Nature Reviews Earth and Environment
Quarterly Journal of the Royal Meteorological Society
Current Climate Change Reports
Climate and Atmospheric Science
Journal of Climate
Weather and Climate Dynamics
Atmospheric Chemistry and Physics Open Access
Advances in Atmospheric Sciences
Journal of Geophysical Research: Atmospheres