

MODULE OUTLINE

1. GENERAL INFORMATION

SCHOOL	SCHOOL OF SCIENCE AND TECHNOLOGY		
PROGRAM COURSE	ADVANCED STUDIES IN PHYSICS		
LEVEL OF STUDY	GRADUATE		
MODULE CODE	PSFDE	YEAR OF STUDY	2 nd
MODULE TITLE	Thesis		
INDEPENDENT TEACHING ACTIVITIES <i>in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits</i>		HOURS	CREDIS
		1120	40 ECTS
COURSE TYPE Compulsory, Optional, Optional mandatory	Compulsory		
PREREQUISITE MODULES:	PSF50, PSF51, PSF60		
LANGUAGE OF INSTRUCTION AND EXAMS	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	No (due to annual duration of the module)		
MODULE WEBSITE (URL)	https://www.eap.gr/en/advanced-studies-in-physics/topics/#met Each module has its own space in the Learning Management System of EAP (http://study.eap.gr), with controlled access (use of code) for students and teaching staff.		

2. LEARNING OUTCOMES

Learning Outcomes The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:
The students who will successfully complete the module: - they will have obtained a deep knowledge of the subject of their subject to the extent that they will be able to comfortably and fluently read and acquire information on cutting-edge research topics from publications in research journals of the respective research area. - They will be able to give high level seminars in which they will be able to explain their subject clearly and to answer related questions from other scientists.
General Competences

Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?

<i>Search for, analysis and synthesis of data and information by the use of appropriate technologies,</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for diversity and multiculturalism</i>
<i>Decision-making</i>	<i>Environmental awareness</i>
<i>Individual/Independent work</i>	<i>Social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Group/Team work</i>	<i>Critical thinking</i>
<i>Working in an international environment</i>	<i>Development of free, creative and inductive thinking</i>
<i>Working in an interdisciplinary environment</i>	<i>.....</i>
<i>Introduction of innovative research</i>	<i>(Other.....citizenship, spiritual freedom, social awareness, altruism etc.)</i>

Adapting to new situations
 Decision-making
 Individual/Independent work
 Project planning and management
 Critical thinking
 Development of free, creative and inductive thinking

3. MODULE CONTENT

The research objects utilized in writing a thesis are harmoniously integrated into the main orientations of the program, that is, understanding the structure of Matter and the Universe and the Material Sciences and Devices.

The director of the program selects groups of related subjects, on the basis of which the prospective students submit a relevant proposal for elaboration. Subsequently, the Board of Directors (and correspondingly as above) designates the supervising member (First supervisor) and the second member of the Evaluation Committee for each submitted MDE proposal if it meets the basic academic requirements. Then the first Supervisor, in collaboration with the students, finalizes the topic and the basic content of the MDE in the digital education area within the first month of preparation and gives the final approval.

The key subjects of the module are:

In particular, the General Categories of subjects for the Master's Thesis are, presently, the following:

- Quantum Field Theory - Elementary Particle Physics
- Classical Field Theory – Solitons
- Condensed Matter Physics
- Gravity - General Theory of Relativity
- Cosmology
- Astrophysics
- Astroparticle Physics
- Experimental Physics of Elementary Particles
- Biophysics

The theory and practice used to further deepen the student's knowledge is based to some extent on the materials modules.

However, for further deepening and acquisition of specialized knowledge and skills, the student, in collaboration with the supervisor, studies work from the relevant literature. This process usually takes 2-3 months. Then the thesis prepared and is checked in its stages both by the supervisor and by a second evaluator.

Key subjects of the module is the set of all subjects of individual modules as they are written in the respective outlines.

4. TEACHING METHODS--ASSESSMENT

MODES OF DELIVERY <i>Face-to-face, in-class lecturing, distance teaching and distance learning etc.</i>	Distance counseling sessions every 3-4 weeks during the academic year on weekends.										
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY <i>Use of ICT in teaching, Laboratory Education, Communication with students</i>	In the meeting and/or in the homework's the following are used: - remote meeting tools (cisco Webex, zoom), - presentation software (powerpoint type), - graphic tablets - digitizers In addition, students use office automation tools, web browsers as well as e-readers for digital books.										
MODULE DESIGN <i>Description of teaching techniques, practices and methods: Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc</i> <i>The study hours for each learning activity as well as the hours of selfdirected study are given following the principles of the ECTS.</i>	<table border="1"> <thead> <tr> <th><i>Activity</i></th><th><i>Annual Workload</i></th></tr> </thead> <tbody> <tr> <td>10 meetings (x 1.5 hours)</td><td>15</td></tr> <tr> <td>Work Preparation (20 weeks x 25 hours)</td><td>500</td></tr> <tr> <td>Individual study</td><td>585 - 625</td></tr> <tr> <td>Total module workload (hours)</td><td>1100-1140</td></tr> </tbody> </table>	<i>Activity</i>	<i>Annual Workload</i>	10 meetings (x 1.5 hours)	15	Work Preparation (20 weeks x 25 hours)	500	Individual study	585 - 625	Total module workload (hours)	1100-1140
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STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS <i>Detailed description of the evaluation procedures.</i> <i>Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other.....etc.</i> <i>Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students</i>	The exam language is Greek. The examination-presentation of the Thesis is done in two periods. (a) May (b) September. The examination includes a 30-minute presentation of the Thesis and an examination before a three-member committee consisting of the main supervisor as well as two additional evaluators. The supervisor has previously agreed that the student fulfils the qualitative and quantitative criteria and that he/she has sufficiently understood the subject as well as how the contents of the thesis are placed in a broader context. To ensure uniformity in the evaluation of the Thesis, the final grade of the Jury is formed on the basis of the evaluation of the written text submitted as well as of the oral presentation. The Assessment Committees consist of the 1st and 2nd Supervisors, as well as the Director (or the coordinator in cases of authorization) who, however, only participates during the oral examination in the assessment process and therefore also in the formulation of the final grade, if this deemed necessary . The students must - after the successful presentation/examination of their master's thesis - and having incorporated any corrections or additions, even appendices - which may be indicated to them by the judging committee – to upload it to the HOU repository (apothesis. eap.gr). All the criteria are posted, in the general regulation of the UOA Annual Program Board https://www.eap.gr/annual-programs/
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(5) SUGGESTED BIBLIOGRAPHY

- Suggested bibliography:

The bibliography is determined accordingly on a case-by-case basis by the DE supervisor.
It depends on the topic and on the student.