



HELLENIC REPUBLIC
ARISTOTELEIO PANEPISTIMIO THESSALONIKIS (ARISTOTLE UNIVERSITY OF THESSALONIKI)
FACULTY OF SCIENCES
SCHOOL OF PHYSICS

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DIPLOMA SUPPLEMENT

This Diploma Supplement is based on the model developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original accompanying qualification to which this supplement is appended. It should be free from any value judgments, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

- 1.1 Family Name(s):** _____
- 1.2 Given Name(s) :** _____
- 1.3 Date of birth (day/month/year), Place, Country of Birth** THESSALONIKI, GREECE
- 1.4 Student identification number or code:** _____

2. INFORMATION IDENTIFYING THE QUALIFICATION

- 2.1 Name of the qualification and (if applicable) title conferred (in original language):**
Πτυχίο Φυσικής (Ptychio Physikis) (Degree in Physics)
- 2.2 Main field(s) of study for the qualification:**
Physics with specialization field in Astronomy (Subject area code: 441)
(<http://www.iky.gr/IKY/portal/gr/default/CMSGRWindow?action=2&uri=/gr/socrates/erasmus/ectsds.html>).
- 2.3 Name and status of awarding institution (in original language):**
Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης (Α.Π.Θ.), (Aristoteleio Panepistimio Thessalonikis-Aristotle University of Thessaloniki, A.U.Th.) Public University, School of Physics. The School of Physics was evaluated positively by an International Committee in January 2011. http://www.physics.auth.gr/en/event_announcements/538
- 2.4 Name and status of institution (if different from 2.3) administering studies (in original language) :**
As in 2.3.
- 2.5 Language(s) of instruction/examination:** Greek

3. INFORMATION ON THE LEVEL OF THE QUALIFICATION

- 3.1 Level of qualification:** Graduate of University (Panepistimio)
- 3.2 Official length of programme:**
8 SEMESTERS, 240 ECTS.
- A full academic year is equivalent to 60 ECTS units and each semester to 30 ECTS (European Credit Transfer System) (1ECTS= 25-30 hours according to the Ministerial Decision no Φ.5/89656/B3, art. 1-3, Hellenic Government Gazette no 1466/2007/B). Each course is credited with a number of ECTS (≥ 2) according to the student's workload (contact hours, laboratory work, examination etc) and accumulation of credits (ECTS) is accomplished after successful completion of the course.
- 3.3 Access requirement(s):**
Upper secondary degree (6 years of studies). National level examination.
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4. INFORMATION ON THE CONTENT AND RESULTS GAINED

4.1 Mode of study:

Full-time

4.2 Programme requirements - aims:

To graduate from the School of Physics the students have to successfully complete 41 obligatory (35 core courses + 2 compulsory specialization courses + 1 foreign language course) and 13 elective courses or alternatively 11 electives + Senior Thesis. The total student work load amounts to at least 240 ECTS units. The core courses are taught during the first 6 semesters. At the beginning of the 7th semester the students have to choose one of the offered 9 specialization fields

- A. Astronomy
- B. Nuclear Physics and Elementary Particle
- C. Theoretical Physics
- D. Solid State Physics
- E. Physics of Technological Materials
- F. Electronics and Telecommunications
- G. Atmospheric and Environmental Physics
- H. Applied Physics
- I. Computational Physics

During the 7th and 8th semester the students have to take 2 compulsory specialization courses and 10 elective courses (5 of which have to be chosen among those offered in the specialization field). The requirements on and the number of electives change slightly when the student chooses to do a Senior Thesis. More specifically when the topic of the Senior Thesis is within (is not within) the scientific field of the chosen specialization field the student has to take 4 (5) electives among the offered in the specific discipline. In addition to that he/she has chosen to 7(6) more elective courses. The field of specialization is not indicated on the PTYCHION but it is listed on the certificate of studies and the analytical list of the taken courses and corresponding grades.

The graduates of the Physics Department have a solid background in the mathematical and computational skills which are necessary to understand and formulate the basic principles of Physics (Quantum Mechanics, Mechanics, Thermodynamics, Nuclear and Solid State Physics) as well its applications (Electronics, Atmospheric Physics, Materials Science etc). In addition to that they get a certain degree of specialization via the specialization courses listed in the above. Furthermore the graduates have the following skills: (a) they are trained in research of the international literature using the university libraries and/or internet resources, (2) they have developed analytical skills towards problem solving and preparation of technical reports (3) they have developed their ability to work independently or in groups (4) they are capable of communicating their work in audience. Finally the graduates are qualified to teach Physics and related subjects in public and private Middle/Secondary Schools as well as they can conduct research in public or private institutions.

4.3 Programme details (e.g. modules or units studied and individual grades/marks/credits obtained) (if this info is available on an official manuscript this should be used):

Courses that the student has successfully attended, as well as subjects for which the student has received recognition or exemption (COR = Core courses, COM = Compulsory courses belonging to the selected specialization, ELC = Elective courses, ELM=Elective courses belonging to the selected specialization, EX = Exchange, DIS = Dissertation):

Courses	Code	Type	Sem.	ECTS credits (Student workload)	Grade	Examination period	ECTS Grading
Calculus I	MA0201	COR	1	5.0	9.0	SEPT. 2007	A
Analytic Geometry and Vector Calculus	MA0205	COR	1	5.0	6.0	SEPT. 2009	C
Physics I: mechanics and waves	Γ00201	COR	1	7.0	5.0	FEB. 2006	D
Applied Informatics Laboratory	HY0501	COR	1	5.0	9.0	FEB. 2006	C
History and Evolution of Physics	ΙΦ0103	COR	1	5.0	6.0	FEB. 2008	C
Chemistry	XM1201	COR	1	6.0	5.0	FEB. 2011	D
Calculus II	MA0202	COR	2	5.0	10.0	JUNE 2008	A
Atomic and Molecular Physics	Γ00240	COR	2	6.0	8.0	JUNE 2011	B
Physics II: thermodynamics and electricity	Γ00202	COR	2	7.0	5.0	JUNE 2010	D
Introductory Physics Laboratory	Γ00506	COR	2	5.0	9.0	SEPT. 2006	B
Linear Algebra	MA0206	COR	2	5.0	8.0	JUNE 2008	B
Calculus III	MA0203	COR	3	6.0	8.0	FEB. 2009	B
Differential Equations	MA0208	COR	3	6.0	5.0	SEPT. 2007	D
Introduction to the Structure of Materials	ΣΥ0236	COR	3	5.0	8.0	FEB. 2009	B
Introduction to Atmospheric Physics	ΑΠ0208	COR	3	5.0	6.0	SEPT. 2009	C
Atomic and Molecular Physics Laboratory	Γ00541	COR	3	5.0	9.0	SEPT. 2007	A
Thermodynamics	Γ00231	COR	3	6.0	7.0	FEB. 2009	C

Courses	Code	Type	Sem.	ECTS credits (Student workload)	Grade	Examination period	ECTS Grading
Electric Circuits: Laboratory Course	EΦ0501	COR	4	5.0	9.0	JUNE 2007	B
Electricity and Magnetism	ΓΘ0260	COR	4	6.0	5.0	SEPT. 2010	D
Theoretical Mechanics I	ΓΘ0211	COR	4	6.0	9.0	JUNE 2008	A
Mathematical Methods in Physics - I	MA0211	COR	4	6.0	9.0	JUNE 2008	B
Optics	ΓΘ0250	COR	4	6.0	5.0	SEPT. 2010	D
Introduction to Electronics	HT0209	COR	5	5.0	5.0	SEPT. 2008	D
Introduction to Astronomy	AA0202	COR	5	5.0	8.0	SEPT. 2009	B
Structure of Materials Laboratory I	ΣΥ0501	COR	5	3.0	7.0	FEB. 2009	C
Optics Laboratory	ΓΘ0551	COR	5	3.0	6.0	FEB. 2008	C
Theoretical Mechanics II	ΓΘ0212	COR	5	7.0	9.0	FEB. 2008	A
Quantum Mechanics I	ΓΘ0221	COR	5	7.0	6.0	FEB. 2008	C
Fundamentals of Nuclear Physics and Elementary Particles	ΠΣ0203	COR	5	5.0	8.0	2011	A
Introduction to Solid State Physics - I	ΣΥ0202	COR	6	5.0	9.0	JUNE 2009	A
Electronics Laboratory	HT0501	COR	6	3.0	9.0	JUNE 2008	A
Neuclear Physics Laboratory I	ΠΣ0503	COR	6	3.0	10.0	JUNE 2009	A
Electromagnetism	ΓΘ0251	COR	6	6.0	6.0	FEB. 2012	B
Quantum Mechanics II	ΓΘ0222	COR	6	6.0	5.0	SEPT. 2009	D
Statistical Physics	ΓΘ0232	COR	6	6.0	5.0	JUNE 2009	D
Astrophysics	AA0212	COM	7	5.0	5.0	2011	D
Observational Astronomy	AA0602	COM	8	5.0	10.0	JUNE 2011	B
Stellar Systems	AA0214	ELM	7	4.0	9.0	FEB. 2010	B
Problems of the Near-Earth Space Environment	AA0116	ELM	7	4.0	7.0	FEB. 2010	B
Theoretical Mechanics III	ΓΘ0213	ELM	8	4.0	8.0	JUNE 2010	C
Cosmology	AA0113	ELM	8	4.0	7.0	FEB. 2011	D
Foreing Language Course I (English)	ΓΑ0211	FL	1	2.0	6.0	FEB. 2006	D
Foreing Language Course II (English)	ΓΑ0212	FL	2	2.0	8.0	SEPT. 2006	B
Foreing Language Course III (English)	ΓΑ0213	FL	3	2.0	8.0	SEPT. 2007	B
Foreing Language Course (English)	ΓΑ0214	FL	4	2.0	8.0	JUNE 2007	B
Biology	ΒΙ1301	ELC	2	4.0	6.0	SEPT. 2006	C
Numerical Analysis	MA0213	ELC	4	4.0	9.0	JUNE 2009	C
Probability and Statistics	MA0210	ELC	6	4.0	8.0	JUNE 2011	C
Programming Languages	ΗΥ0205	ELC	7	4.0	10.0	FEB. 2010	B
Dynamical Systems and Chaos	ΓΘ0215	ELC	7	4.0	9.0	2011	B
Mathematical Programming and Operations Research	ΗΥ0101	ELC	7	4.0	10.0	FEB. 2011	A
Computational Physics of Dynamical Systems	ΗΥ0109	ELC	7	4.0	9.0	FEB. 2010	C
Senior Thesis	ΑΜ0702	DIS	8	8.0	10.0	FEB. 2012	A
TOTAL ECTS				257.0			

The Degree is awarded according to the required minimum local credit units (162.0) and the student may be examined in two more optional courses (Ministerial Decision no Φ.1231/B1/425, art. 60 section 3, Hellenic Government Gazette no 1099/2000/B)

ECTS grading (A=10%, B=25%, C=30%, D=25%, E=10%) is based on a sample of a minimum of 100 students. If the sample is not sufficient then <PASS> is noted (according to the Ministerial Decision no Φ.5/89656/B3, art. 4, Hellenic Government Gazette no 1466/2007/B).

The ECTS grading system is based on the following: Crocker, L., & Algina, J. (1986). Introduction to classical and modern test theory. New York: Harcourt Brace Jovanovich College Publishers.

Dissertations or/and Internship projects as well are considered as individual projects and they are not graded based on a previous sample. The same stands for the Erasmus courses for which we accept the grading of the receiving institution and we convert it to the local grade accordingly.

4.4 Grading scheme, and if available, grade distribution guidance :

A scale of 1 to 10 applies to the marks of each subject in the Hellenic Higher Education. The grading scheme is as follows in the qualification Ptychion (Ministerial Decision no Φ.1231/B1/425 art.60, Hellenic Government Gazette no

1099/2000/B):

Άριστα (Arista) Excellent: 8.50-10.00

Λίαν Καλώς (Lian Kalos) Very Good : 6.50- 8.49

Καλώς (Kalos) Good : 5.00-6.49

Minimum passing grade : 5

4.5 Overall classification of the qualification (in original language):

"Λίαν Καλώς" (Very Good): 7.48

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study:

The qualification is a terminal award and allows access to postgraduate studies.

5.2 Professional status (if applicable):

No additional professional qualification is necessary for the Graduates in order to be employed in the public or private sector.

6. ADDITIONAL INFORMATION

6.1 Additional information:

6.2 Further information sources

SCHOOL OF PHYSICS: <http://www.physics.auth.gr>

ARISTOTLE UNIVERSITY OF THESSALONIKI: <http://www.auth.gr>

GREEK MINISTRY OF EDUCATION, LONG LIFE LEARNING AND RELIGIOUS AFFAIRS:

<http://www.minedu.gov.gr>

EUROPEAN UNION EDUCATIONAL ISSUES: <http://www.europa.eu.int>

EURYDICE: <http://eacea.ec.europa.eu/education/eurydice/index.en.php>

7. CERTIFICATION OF THE SUPPLEMENT

7.1 Date: 21/3/2012

7.2 Name and Signature: Th. Laopoulos

7.3 Capacity: President of the School

7.4 Official Stamp or seal:

This certificate is issued for foreign authorities and is signed by the President of the School according to the regulation No. 49923/2008 (Hellenic Government Gazette no 873/2008/B).

8. "INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM"

<https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Greece:Overview>

Higher education constitutes the last level of education system and comprises the University and Technological sectors. The University sector includes Universities, Technical Universities, and the School of Fine Arts. The Technological sector includes the Technological Education Institutions (TEIs), and the School of Pedagogical and Technological Education (ASPETE). Lifelong Learning policy in Greece is part of a wider development plan aiming at giving emphasis to human knowledge, abilities and skills.

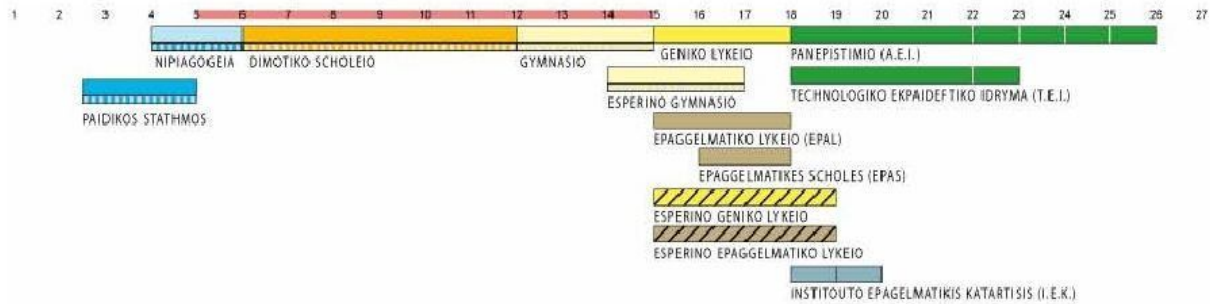
The Greek education system is governed by national laws and legislative acts (decrees, ministerial decisions). The general responsibility for education lies with the Ministry of Education Lifelong Learning and Religious Affairs. The Child and Infant Centres run by the Municipal Authorities.

The administration of primary and secondary education is conducted hierarchically by: the Ministry of Education Lifelong Learning and Religious Affairs; the Regional Education Directorates; the Directorates of Education (Prefecture); the Education Offices (Province); and the School.

Higher education institutions are fully self-administered legal entities of public law. Collective bodies that are established and act in compliance with special legislation administer each institution.

Detailed information on the Greek education system can also be sought at the Ministry of Education Lifelong Learning and Religious Affairs website.

Structure of the national education system 2011/12



Pre-primary education (ISCED 0) <i>For which the Ministry of Education is not responsible.</i>	General lower secondary education (ISCED 2)	Short-cycle Higher education (ISCED 5B)
Pre-primary education (ISCED 0) <i>For which the Ministry of Education is responsible</i>	Vocational lower secondary education (ISCED 2)	Higher education (ISCED 5A)
Primary education (ISCED 1)	General upper secondary education (ISCED 3)	Part-time or combined school and workplace courses
Single structure education: integrated primary and lower secondary (ISCED 1 + 2)	Vocational upper secondary education (ISCED 3)	
Compulsory full-time education	Additional year	Study abroad
Compulsory part-time education	-/n/- Compulsory work experience + its duration	Allocation to the ISCED levels: ISCED 0 ISCED 2 ISCED 1