ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΑΡΙΣΤΟΤΕΛΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΕΣΣΑΛΟΝΙΚΗΣ

ΣΧΟΛΗ ΘΕΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ
ΤΜΗΜΑ ΜΑΘΗΜΑΤΙΚΩΝ

HELLENIC REPUBLIC
ARISTOTLE UNIVERSITY OF THESSALONIKI

FACULTY OF SCIENCES
SCHOOL OF MATHEMATICS

# ΑΝΤΙΓΡΑΦΟ ΠΤΥΧΙΟΥ

ΠΙΣΤΟΠΟΙΕΙΤΑΙ ΟΤΙ:

**Ο Σιώρος Απόστολος Παναγιώτης του Ευάγγελου**

Τόπος γέννησης: Λάρισα

αφού εκπλήρωσε όλες τις από τους πανεπιστημιακούς νόμους επιβαλλόμενες υποχρεώσεις για τη λήψη πτυχίου κρίθηκε άξιος του πτυχίου του Τμήματος

**ΜΑΘΗΜΑΤΙΚΩΝ**

της **ΣΧΟΛΗΣ ΘΕΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ**

με βαθμό: **7,35 "ΛΙΑΝ ΚΑΛΩΣ"**
**(ΕΠΤΑ ΚΑΙ ΤΡΙΑΝΤΑ ΠΕΝΤΕ ΕΚΑΤΟΣΤΑ)**

Έλαβε το πτυχίο στις **07 Απριλίου 2021**

# COPY OF DEGREE (PTYCHIO)

IT IS CERTIFIED THAT:

**Sioros Apostolos Panagiotis son of Evangelos**

Place of Birth: Larisa

having fulfilled all Degree requirements according to the current provisions, was awarded the degree of the

**SCHOOL OF MATHEMATICS**

**FACULTY OF SCIENCES**

with grade: **7,35 "VERY GOOD"**
**(SEVEN AND THIRTY-FIVE HUNDREDTHS)**

Degree conferred on **07 April 2021**

Το πιστοποιητικό αυτό χορηγείται για χρήση στην Ελλάδα ή στο εξωτερικό και υπογράφεται από την Προϊσταμένη της Γραμματείας του Τμήματος, σύμφωνα με την υπ' αριθμ. 40528/25-01-2024 Πρυτανική Πράξη (ΦΕΚ 716/31-1-2024, τ.Β').

This certificate is issued for any official use in Greece or abroad and is signed by the Head of the School's Registrar pursuant to the Rector's Act No. 40528/25-01-2024 (Government Gazette FEK 716/31-1-2024, vol. B).

Αρ. Πιστ. - Cert. No.: 2176/22-05-2025

Θεσσαλονίκη - null, 22/05/2025

**Με εντολή του Πρύτανη - Issued on the Direction of the Rector**

**Η Προϊσταμένη της Γραμματείας του Τμήματος - The Head of the School's Registrar**

Anastasia Stergiou

Digitally signed by Anastasia Stergiou
Date: 2025.05.22 11:53:56 +03'00'

(υπογραφή)

**Αναστασία Στεργίου - Anastasia Stergiou**

Το παρόν αποτελεί απόδοση του πρωτότυπου πτυχίου στη νεοελληνική γλώσσα - This document is a true translation of the original Degree as issued in Greek

Βαθμολογική Κλίμακα Επιτυχίας
α) 5,00 - 6,49 Καλώς
β) 6,50 - 8,49 Λίαν Καλώς
γ) 8,50 - 10,00 Άριστα

Grading Scale of Success
a) 5.00 - 6.49 Good
b) 6.50 - 8.49 Very Good
c) 8.50 - 10.00 Excellent



https://certify.auth.gr
TBA7D-IRUFH-LO9XC-EN163

HELLENIC REPUBLIC
ARISTOTELEIO PANEPISTIMIO THESSALONIKIS (ARISTOTLE UNIVERSITY OF THESSALONIKI)
FACULTY OF SCIENCES
SCHOOL OF MATHEMATICS
http://www.math.auth.gr, Tel. +30 2310997950, e-mail: info@math.auth.gr, A.U.Th., 54124, Thessaloniki, Greece.

# 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):** | Sioros |
| 1.2 | **Given Name(s) :** | Apostolos Panagiotis |
| 1.3 | **Date of birth (day/month/year), Place, Country of Birth** | 01/02/1996, Larisa, Greece |
| 1.4 | **Student identification number or code:** | 1500120140157038 |

## 2. INFORMATION IDENTIFYING THE QUALIFICATION

**2.1 Name of the qualification and (if applicable) title conferred (in original language):**

Πτυχίο Μαθηματικών (Ptychio Mathimatikon) (Degree in Mathematics)

**2.2 Main field(s) of study for the qualification:**

Mathematics

**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

**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:** 1st Cycle

**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 student work load hours). Compliance with the ECTS (European Credit Transfer and Accumulation System) regulations started in 2007, when the Greek Legislation was harmonized with the relevant European one (Ministerial Decision no Φ5/89656/β3, 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.

## 4. INFORMATION ON THE CONTENT AND RESULTS GAINED

### 4.1 Mode of study:

Full-time

### 4.2 Programme requirements:

The requirements for the Degree in Mathematics are 240 ECTS units as specified below. In particular the students must pass a) all core courses (COR), b) four Compulsory Elective courses (COME) from four distinct specializatios and c) at least twelve more courses: of these at most five might be free Elective (FELC) while the rest might be additional Compulsory Elective course (COME) or Elective Courses (ELC).The examination is oral/written or in an assignment form. The aim of the undergraduate study programme (UPS) provided by the Schoool of Mathemetics is to train students to the study and comprehension of the science of mathematics as well as its applications in other sciences and new technologies. Upon the successful completion of their studies and based upon the courses taken the graduates can teach mathematics in Secondary Education and work in the puplic or private sector wherever applications of methematics is required, for example Statistics, Financial Mathematics, Business Management, etc. They can also choose to continue to graduate studies leading to basic and applied research in mathematics.
Graduates of the school of Mathematics, further to the basic knowledge of their discipline and profession are able to: 1) apply knowledge in practice, 2) communicate in a foreign language, 3) search, process, analyse and synthesize data and information, use also the necessary technologies, 4)adapt to novel situations and make decisions, 5) work independently or in groups in international and/or interdisciplinary contexts, 6) generate new research ideas and design and manage projects, 7) respect deversity, multiculturalism and the natural environment, 8) demonstrate social, professional and moral responsibility and sensitivity to gender issues, 9) view themselves as well as other critically, 10) promote free, inductive and deductive thinking.

### 4.3 Programme details (e.g. modules or units studied and individual grades/marks/credits obtained):

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 specialisation, COME=Compulsory Elective courses belonging to the selected specialization, ELC = Elective courses, FELC= Free Elective courses , EX = Exchange):

| Code | Courses | Type | ECTS credits Student workload | Grade | Examination period | ECTS Grading |
|---|---|---|---|---|---|---|
| 0108 | Linear Algebra | COR | 8.0 | 5.0 | FEB 2015 | E |
| 0102 | Introduction to Algebra | COR | 5.5 | 9.0 | FEB 2015 | E |
| 0430 | Introduction to Computer Programming | COR | 5.0 | 5.0 | FEB 2015 | E |
| 0401 | Theoretical Informatics I | COR | 5.5 | 7.0 | FEB 2015 | E |
| 0201 | Calculus I | COR | 7.0 | 6.0 | SEP 2015 | E |
| 0301 | Analytic Geometry I | COR | 5.5 | 8.0 | JUN 2015 | E |
| 0202 | Calculus II | COR | 7.0 | 5.0 | JUN 2015 | E |
| 0501 | Mathematical Programming | COR | 5.5 | 6.0 | JUN 2015 | E |
| 0106 | Algebraic Structures I | COR | 5.5 | 6.0 | FEB 2016 | E |
| 0302 | Analytic Geometry II | COR | 5.5 | 7.0 | FEB 2016 | E |
| 0502 | Probability Theory I | COR | 7.0 | 10.0 | SEP 2020 | E |
| 0203 | Calculus III | COR | 7.0 | 9.0 | SEP 2016 | E |
| 0204 | Topology of Metric Spaces | COR | 7.0 | 7.0 | FEB 2018 | E |
| N0107 | Algebraic Structures II | COR | 5.5 | 5.0 | JUN 2018 | E |
| 0206 | Differential Equations | COR | 7.0 | 6.0 | SEP 2016 | E |
| 0205 | Calculus IV | COR | 7.0 | 7.0 | SEP 2020 | E |
| 0504 | Mathematical Methods in Operational Research | COR | 5.5 | 8.0 | JUN 2016 | E |
| 0503 | Statistics | COR | 7.0 | 6.0 | JUN 2016 | E |
| 0402 | Numerical Analysis | COR | 5.5 | 7.0 | FEB 2018 | E |
| 0207 | Introduction to Real Analysis | COR | 5.5 | 6.0 | SEP 2020 | E |
| 0505 | Probability Theory II | COR | 5.5 | 5.0 | SEP 2017 | E |
| 0303 | Classical Differential Geometry I | COR | 7.0 | 6.0 | FEB 2019 | E |
| 0506 | Stochastic Strategies | COR | 5.5 | 8.0 | SEP 2017 | E |
| 0208 | Complex Analysis | COR | 7.0 | 8.0 | SEP 2020 | E |
| 601 | Analysis of Mathematical Texts in English | ELC | 5.0 | 10.0 | SEP 2019 | E |
| 0963 | Didactics of Mathematics I | ELC | 5.0 | 7.0 | JUN 2018 | E |
| 0564 | Time Series | ELC | 5.0 | 8.0 | JUN 2019 | E |
| 0562 | Stochastic Methods in Finance | ELC | 5.0 | 9.0 | FEB 2019 | E |
| 0566 | Sampling | ELC | 5.0 | 8.0 | SEP 2018 | E |
| 0962 | History of Mathematics | ELC | 5.0 | 10.0 | JUN 2019 | E |

| Code | Courses | Type | ECTS credits Student workload | Grade | Examination period | ECTS Grading |
|---|---|---|---|---|---|---|
| 0462 | Modern Control Theory | ELC | 5.0 | 7.0 | SEP 2019 | E |
| 0331 | Linear Geometry I | CE | 5.5 | 8.0 | JUN 2018 | E |
| 0532 | Matrix Theory | CE | 5.5 | 7.0 | SEP 2019 | E |
| 0533 | Determinisstic Methods of Optimization | CE | 5.5 | 8.0 | JUN 2019 | E |
| 0433 | Classical Control Theory | CE | 5.5 | 6.0 | FEB 2020 | E |
| 0465 | Error Correcting Codes | CE | 5.5 | 6.0 | FEB 2021 | E |
| 0535 | Stochastic Operational Research | CE | 5.5 | 9.0 | FEB 2018 | E |
| 0235 | Partial Differential Equations | CE | 5.5 | 8.0 | SEP 2020 | E |
| Π3000 | Critical and Ecological-System Peace Education | COF | 5.0 | 10.0 | FEB 2019 | E |
| 1066 | Continuum Mechanics | COF | 5.0 | 10.0 | JUN 2018 | E |
| Π1000 | Introduction to Pedagogical Research | COF | 5.0 | 10.0 | JUN 2018 | E |
| 12YE05 | FINANCIAL ANALYSIS I | COF | 5.0 | 9.0 | FEB 2018 | E |
| **TOTAL ECTS** | | | **242.5** | | | |

The Degree is awarded according to the required minimum local credit units and the student may be examined in two more optional courses (art. 60, Ministerial Decision no F1.231/?1/425, 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 nothing 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 Annex 3 of the ECTS Guide, 2009, and on 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.
Άριστα (Arista) Excellent:8.50-10.00
Λίαν Καλώς (Lian Kalos) Very Good: 6.50-8.49
Καλώς (Kalos) Good: 5.00-6.49
Ανεπιτυχώς(Anepitychos) Fail: 0.00-4.99
Minimum passing grade: 5.00

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

"Λίαν Καλώς" ("Very Good"): 7.35

## 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):**

Not applicable.

## 6. ADDITIONAL INFORMATION

**6.1 Additional information:**

Not applicable.

**6.2 Further information sources**

SCHOOL OF MATHEMATICS: http://www.math.auth.gr
ARISTOTLE UNIVERSITY OF THESSALONIKI: <http://www.auth.gr>
GREEK MINISTRY OF EDUCATION 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: 7/4/2021**

**7.2 Name and Signature:** ANASTASIA STEROIOU

**7.3 Capacity:** On behalf of the Rector, the Head of the Administration Office

**7.4 Official Stamp or seal:**

This certificate is issued for use in abroad and is signed by the Head of the Administration Office of the School, according to Rector's Decision No 4749/11.10.2019 (Official Journal of the Hellenic Republic 3962/30.10.2019, vol. B').

## 8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

Pursuant to the Constitution (article 16, paragraph 5), Greek Tertiary Education is public and gratis. Furthermore, according to the legal framework, it is divided into:

(a) the University sector (A.E.I.): Universities, Technical Universities, Fine Arts School, etc., and
(b) the Technological sector (T.E.I.): Technological Education Institutions and the School of Pedagogic and Technological Education.

Part of the University sector is also, since 1998, the Greek Open University, which provides open and distance -undergraduate and postgraduate- education and training.
There are also state post-secondary non-tertiary Institutions offering vocationally oriented courses of shorter duration (2 to 3 years), which operate under the authority of other Ministries.

All graduates of secondary education (Geniko and Epagelmatiko Lykeio) can be admitted to Higher Education Institutions, depending on the general score obtained in national examinations that take place at the end of the final year of Lyceum. The admission system is based on the number of available places (numerus clausus), the candidates' performance, and the candidates' ranked preferences of Schools. Admission to particular schools may also require a special examination (eg drawing for Architecture, etc.).

Study programmes in Higher Education Institutions last from four to six years, depending on the subject area. Students who successfully complete their studies are awarded a Ptychio / Diploma, which permits employment or further studies at post-graduate level leading to a Metaptychiako Diploma Eidikefsis (2nd cycle) - equivalent to the Master's degree- and to the doctorate degree (3d cycle), Didaktoriko Diploma.
Legislation on quality assurance in Higher Education, the Credit Transfer and Accumulation System (ECTS) and the Diploma Supplement defines the framework and the criteria for the evaluation of Higher Education Institutions, and for the certification of programmes of studies. These measures aim, among others, at promoting student mobility and contributing to the creation of the European Higher Education Area.

A detailed description of the Greek Education System is offered in:

- EURYDICE (<http://www.eurydice.org>) database of the European Education Systems.
- <http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/122EN.pdf> (pages 82,83)