

HELLENIC REPUBLIC
UNIVERSITY OF PATRAS



SCHOOL OF NATURAL SCIENCES DEPARTMENT OF MATHEMATICS
UNIVERSITY CAMPUS, 26504, RIO, PATRAS, GREECE

Email: secr-math@math.upatras.gr url: <http://www.math.upatras.gr>

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	Student identification number or code		
1.4	Date of birth (day/month/year)	1.5	Place, Country of Birth
2. INFORMATION IDENTIFYING THE QUALIFICATION			
2.1	Name of the qualification and (if applicable) title conferred (in original language)	2.2	Main field(s) of study for the qualification
	<i>Bachelor of Science in Mathematics (Ptychio Mathimatikon)</i>		<i>Mathematics</i>
2.3	Name and status of awarding institution <i>ιδρύματος</i> (in original language)	2.4	Name and status of institution (if different from 2.3) administering studies (in original language)
	<i>University of Patras (HEI), Public University (Panepistimio Patron)</i>		
2.5	Language(s) of instruction/examination		
	<i>Greek</i>		
3. INFORMATION ON THE LEVEL OF THE QUALIFICATION			
3.1	Level of qualification	3.2	Official length of programme
	<i>Undergraduate programme (1st cycle – ISCED 6)</i>		<i>8 Semesters (4 Academic Years), at least 240 ECTS.</i>
3.3	Access requirement(s)		
	<i>Unified upper secondary education degree and success in national entrance exams.</i>		

4. INFORMATION ON THE CONTENT AND RESULTS GAINED

4.1 Mode of study

Full-time

4.2 Undergraduate program requirements

The academic program emphasizes mathematical reasoning as well as applications of mathematics with the dual objective of providing students with adequate theoretical and practical skills in order to successfully handle their future academic and professional challenges. This means that the graduates of the program must be in a position to:

- ✓ keep up with the latest scientific advances and be able to deepen their understanding of their specialty areas,*
- ✓ be able to collaborate with other mathematicians and scientists on related disciplines,*
- ✓ have the flexibility to take advantage of theoretical and technological developments,*
- ✓ possess the knowledge required for pursuing graduate studies in their chosen academic fields.*

The department adheres to a higher-education policy which aims at offering an abundance of elective courses without compromising the need for numerous mandatory course offerings. This allows students to concoct a partly personal program of courses making it possible for them to concentrate on what interests them most. It also allows the department to be flexible in designing a program which serves academic and practical needs. Students are required to complete 240 ECTS units in order to acquire a Bachelor's degree in Mathematics. Specifically, besides the 19 core courses, students are also required to complete 17 elective courses in order to fulfill the requirements for one of the following 5 directions of study:

- [A] Pure Mathematics*
- [B] Applied Mathematics*
- [C] Informatics and Computational Mathematics*
- [D] Statistics, Probability Theory and Operational Research*
- [E] Mathematics: General Direction*

The different study options above do not lead to different degrees; the degree awarded at graduation is independent of the selected study option and carries the same professional rights and reflects the same core mathematical knowledge. The purpose of offering multiple study options is to allow students to pursue their preferred mathematical direction in some additional depth.

4.3 Program details (e.g. modules or units studied), and the individual grades/marks/credits obtained (if this information is available on an official transcript this should be used here)

Courses that the student has successfully attended, as well as courses for which the student has received recognition or exemption are as follows:

CODE	COURSE	TYPE	Semester	ECTS credits	Grade	Examination period	ECTS Grading
MAT_PM101	ANALYTIC GEOMETRY	C	1	7			
MAT_PM102	INTRODUCTION TO ALGEBRA AND SET THEORY	C	1	8			
MAT_IC102	INTRODUCTION TO COMPUTERS AND PROGRAMMING WITH FORTAN	C	1	7			
MAT_PM103	CALCULUS I	C	1	8			
MAT_IC101	PROGRAMMING WITH PYTHON	C	2	7			
MAT_PM104	LINEAR ALGEBRA I	C	2	8			
MAT_PM105	CALCULUS II	C	2	8			
MAT_IC103	DISCRETE MATHEMATICS	C	2	7			
MAT_IC204	INTRODUCTION TO NUMERICAL ANALYSIS	C	3	7			
MAT_ST201	PROBABILITY I	C	3	8			
MAT_PM106	CALCULUS III	C	3	8			
MAT_AM201	INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS	C	3	7			
MAT_PM207	ALGEBRA I	C	4	6			
MAT_AM202	REAL ANALYSIS I	C	4	6			
MAT_AM231	SYMBOLIC COMPUTATION PACKAGES FOR ADVANCED MATHEMATICS	S	4	6			
MAT_AM232	SECOND COURSE IN ORDINARY DIFFERENTIAL EQUATIONS	S	4	6			
MAT_ST231	PROBABILITY II	S	4	6			
MAT_IC231	ADVANCED NUMERICAL ANALYSIS	S	4	6			
MAT_IC232	OBJECT-ORIENTED PROGRAMMING USING C++	S	4	6			
MAT_DI231	EUCLIDEAN GEOMETRY AND ITS TEACHING	EC	4	6			
MAT_PM261	PROJECTIVE GEOMETRY	EC	4	6			
MAT_OR263	ENGLISH	EC	4	6			
MAT_OR264	FRENCH	EC	4	6			

CODE	COURSE	TYPE	Semester	ECTS credits	Grade	Examination period	ECTS Grading
MAT_OR265	GERMAN	EC	4	6			
MAT_OR266	RUSSIAN	EC	4	6			
MAT_OR267	ITALIAN	EC	4	6			
MAT_PM308	DIFFERENTIAL GEOMETRY I	C	5	7			
MAT_AM303	CLASSICAL MECHANICS	C	5	7			
MAT_PM309	REAL ANALYSIS II	C	5	8			
MAT_ST302	STATISTICAL INFERENCE I	C	5	8			
MAT_PM310	COMPLEX ANALYSIS	C	6	6			
MAT_PM332	GENERAL TOPOLOGY	S	6	6			
MAT_PM231	LINEAR ALGEBRA II	S	6	6			
MAT_ST332	MATHEMATICAL PROGRAMMING	S	6	6			
MAT_ST333	STATISTICAL INFERENCE II	S	6	6			
MAT_IC335	NUMERICAL SOLUTIONS OF ORDINARY DIFFERENTIAL EQUATIONS	S	6	6			
MAT_IC233	MATHEMATICAL FOUNDATIONS OF THE THEORY OF COMPUTATION	S	6	6			
MAT_DI362	INTRODUCTION TO THE PHILOSOPHY OF MATHEMATICS	EC	6	6			
MAT_DI361	MATHEMATICAL LOGIC	EC	6	6			
MAT_DI363	LEARNING AND FORMATION OF MATHEMATICAL KNOWLEDGE	EC	6	6			
MAT_AM333	SPECIAL RELATIVITY	EC	6	6			
MAT_AM465	TOPICS IN CLASSICAL MECHANICS	EC	6	6			
MAT_AM263	INTEGRAL EQUATIONS	EC	6	6			
MAT_ST361	SIMULATION METHODS	EC	6	6			
MAT_IC468	NUMERICAL SOLUTIONS OF PARTIAL DIFFERENTIAL EQUATIONS	EC	6	6			
MAT_IC362	MICROCOMPUTERS	EC	6	6			
MAT_PM434	ALGEBRA II	S	7	6			
MAT_PM436	THEORY OF MEASURE AND INTEGRATION	S	7	6			
MAT_AM434	DYNAMICAL SYSTEMS	S	7	6			
MAT_AM436	PARTIAL DIFFERENTIAL EQUATIONS	S	7	6			
MAT_ST434	LINEAR MODELS	S	7	6			
MAT_ST435	OPERATIONS RESEARCH MODELS	S	7	6			
MAT_ST436	STOCHASTIC PROCESSES	S	7	6			
MAT_IC336	DATA STRUCTURES	S	7	6			
MAT_PM462	GENERAL TOPOLOGY II	EC	7	6			
MAT_PM435	GEOMETRY	EC	7	6			
MAT_DI432	INTRODUCTION TO EDUCATIONAL SCIENCES	EC	7	6			
MAT_PM437	SET THEORY	EC	7	6			
MAT_DI463	HISTORY OF MATHEMATICS	EC	7	6			
MAT_PM463	TENSOR ANALYSIS AND GEOMETRY	EC	7	6			
MAT_AM262	ANALYTICAL MECHANICS	EC	7	6			
MAT_AM464	SPECIAL FUNCTIONS	EC	7	6			
MAT_AM435	INTRODUCTION TO QUANTUM MECHANICS	EC	7	6			
MAT_AM466	FLUID MECHANICS	EC	7	6			
MAT_ST467	ACTUARIAL MATHEMATICS	EC	7	6			
MAT_ST462	SELECTED TOPICS IN PROBABILITY AND STATISTICS	EC	7	6			
MAT_IC334	NUMERICAL LINEAR ALGEBRA	EC	7	6			
MAT_IC463	NUMERICAL SOLUTIONS OF TRANSCENDENTAL EQUATIONS	EC	7	6			
MAT_IC469	DATABASE MANAGEMENT SYSTEMS	EC	7	6			
MAT_IC437	OPERATING SYSTEMS	EC	7	6			
MAT_OR461	ATMOSPHERIC PHYSICS I - METEOROLOGY I	EC	7	6			
MAT_OR463	INTRODUCTION TO MANAGEMENT FOR SCIENTISTS AND ENGINEERS	EC	7	6			
MAT_OR464	INTRODUCTION TO ECONOMICS FOR SCIENTISTS AND ENGINEERS	EC	7	6			
MAT_PM333	DIFFERENTIAL GEOMETRY II	S	8	6			
MAT_PM438	FUNCTIONAL ANALYSIS: SPACES AND OPERATORS	S	8	6			
MAT_AM438	FOURIER TRANSFORM, DISTRIBUTIONS AND APPLICATIONS	S	8	6			
MAT_IC438	ALGORITHMS AND COMPLEXITY	S	8	6			
MAT_DI434	PROBLEM SOLVING AND THE FORMATION OF MATHEMATICAL CONCEPTS	EC	8	6			

CODE	COURSE	TYPE	Semester	ECTS credits	Grade	Examination period	ECTS Grading
MAT_PM464	ELEMENTS OF COMMUTATIVE ALGEBRA	EC	8	6			
MAT_DI465	NATURAL LANGUAGES AND MATHEMATICAL REASONING	EC	8	6			
MAT_AM469	DYNAMICAL ASTRONOMY	EC	8	6			
MAT_AM468	INTRODUCTION TO MODERN PHYSICS	EC	8	6			
MAT_AM467	CHAOS AND FRACTALS	EC	8	6			
MAT_ST437	INTRODUCTION TO DATA ANALYSIS	EC	8	6			
MAT_ST438	SAMPLING THEORY	EC	8	6			
MAT_ST463	NONPARAMETRIC STATISTICS	EC	8	6			
MAT_ST465	QUEUEING SYSTEMS	EC	8	6			
MAT_ST468	STOCHASTIC MODELS IN OPERATIONS RESEARCH	EC	8	6			
MAT_IC464	INTRODUCTION TO INTERVAL ANALYSIS	EC	8	6			
MAT_OR462	ATMOSPHERIC PHYSICS II - METEOROLOGY II	EC	8	6			
MAT_AL461	UNDERGRADUATE THESIS	EC	8	12			
MAT_AL462	INTERNSHIP	EC		2			

STUDENT'S GRADE POINT AVERAGE (GPA):

XX,XX

X

Totals:

C = **XX** S = **XX** EC = **XX**

Total no of courses: **XX**

ECTS:

C = **XXX** S = **XXX** EC = **XXX**

Total ECTS Units: **XXX**

Explanations

- [1] C = Core courses, S = Compulsory Elective courses belonging to the selected specialization, EC = Elective courses, EP = Exchange Programmes, E = Exemptions. Courses denoted with an asterisk (*) are optional extras and therefore are not required for the Degree.
- [2] Undertaking a dissertation (undergraduate thesis) is optional. If chosen by students, it should be carried out during their 8th semester of studies, is worth 12 ECTS and will be graded after its completion.
- [3] Student internships are optional and can be carried out during either of the last two semesters of study. They are worth 2 ECTS, which are not included in the required ECTS for the award of a degree.
- [4] ECTS grading (A=10%, B=25%, C=30%, D=25%, E=10%) is based on a sample of a minimum of 100 students. In cases where the sample is insufficient, the characterization "Pass" is assigned as a grade (according to the Ministerial Decision no Φ.5/89656/B3, art. 4, Hellenic Government Gazette no 1466/2007/B).
- [5] Dissertations or/and Internship projects are considered individual projects and are not graded based on a previous sample. The same stands for Erasmus courses for which we accept the grading of the receiving institution and convert it to the local grade accordingly.

4.4 Grading scheme and, if available, grade distribution guidance	4.5 Overall classification of the qualification (in original language)																
<p>A scale of 1 to 10 applies to the marks of each subject in the Hellenic Higher Education.</p> <table border="1"> <tr> <td>8.50 -10.00</td> <td>ΑΡΙΣΤΑ (ARISTA) - EXCELLENT</td> </tr> <tr> <td>6.50 -8.49</td> <td>ΛΙΑΝ ΚΑΛΩΣ (LIAN KALOS) -VERY GOOD</td> </tr> <tr> <td>5.00-6.49</td> <td>ΚΑΛΩΣ (KALOS) - GOOD</td> </tr> </table> <p>Minimum passing grade: 5.00.</p> <p>ECTS Grading</p> <table border="1"> <tr> <td>10%</td> <td>A</td> </tr> <tr> <td>25%</td> <td>B</td> </tr> <tr> <td>30%</td> <td>C</td> </tr> <tr> <td>25%</td> <td>D</td> </tr> <tr> <td>10%</td> <td>E</td> </tr> </table>	8.50 -10.00	ΑΡΙΣΤΑ (ARISTA) - EXCELLENT	6.50 -8.49	ΛΙΑΝ ΚΑΛΩΣ (LIAN KALOS) -VERY GOOD	5.00-6.49	ΚΑΛΩΣ (KALOS) - GOOD	10%	A	25%	B	30%	C	25%	D	10%	E	<p>XX,XX - "Χαρακτηρισμός" / "Χαρακτηρισμός_Αγγλικά"</p> <p>ECTS grade: X</p>
8.50 -10.00	ΑΡΙΣΤΑ (ARISTA) - EXCELLENT																
6.50 -8.49	ΛΙΑΝ ΚΑΛΩΣ (LIAN KALOS) -VERY GOOD																
5.00-6.49	ΚΑΛΩΣ (KALOS) - GOOD																
10%	A																
25%	B																
30%	C																
25%	D																
10%	E																

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study	5.2 Professional status (if applicable)
<i>Access to postgraduate studies:</i> <ul style="list-style-type: none"> • 2nd cycle (MSc – ISCED 7) • 3rd cycle (PhD Diploma – ISCED 8) 	<i>Not applicable.</i>

6. ADDITIONAL INFORMATION

6.1 Additional information	6.2 Further information sources
<i>Selected direction of study:</i> XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	University of Patras: http://www.upatras.gr Department of Mathematics: http://www.math.upatras.gr The Department of Mathematics has undergone external evaluation from the Hellenic Quality Assurance Agency for Higher Education (H.Q.A.A. – A.D.I.P.), in 2013. The Evaluation Report is available at this address Ministry of Education, Research and Religious Affairs: http://www.minedu.gov.gr European Commission, Education: https://ec.europa.eu/info/education_el The Eurydice network: http://eacea.ec.europa.eu/education/eurydice UNESCO Institute for Statistics (Education Issues): http://www.uis.unesco.org/Education
<i>Dissertation (optional):</i> XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
<i>Internship (optional):</i> X-week Practical Training in XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
<i>Erasmus+ (optional):</i> From dd/mm/yyyy to dd/mm/yyyy the above mentioned graduate attended the courses of [name the department] of [name the university – country] within the frame of ERASMUS+. The modules successfully completed at the host institution correspond to [code] unit codes of the Department of Mathematics.	
<i>Scholarships, awards (optional):</i> XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	

7. CERTIFICATION OF THE SUPPLEMENT

7.1 Date	7.2 Signature
<i>DD/MM/YYYY</i>	
7.3 Capacity	7.4 Official stamp or seal
<i>Head of the Mathematics Department, University of Patras</i>	

8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

<i>A detailed description of the Greek Education System is offered in EURYDICE database of the European Education Systems.</i>	
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